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ARTICLE I.—*Retroversion of the Unimpregnated Womb.* By A. REEVES JACKSON, M.D., Surgeon-in-Chief of the Woman's Hospital of the State of Illinois. (Read before the Chicago Society of Physicians and Surgeons, Sept. 2, 1872.)

The practice of medicine would seem to require, more than any other art, a harmony of opinion among its professors, for there is no other in which error is of so much consequence, or where doubt and uncertainty entail so much anxiety. Yet the history of medicine is full of schisms and discrepancies, and the sages of our art have left us a heritage of opposing sentiments upon almost every question of theory and practice. To no one subject do these remarks apply more fitly than to that of retroversion of the womb.

Although allusions were made to this displacement by many of the older medical writers, it was first accurately described by Hunter, in 1754. Since that time there is scarcely a writer on midwifery who does not mention it; yet notwithstanding this frequent notice of the disorder, and the great amount of research that has been devoted to it, there is hardly a disease in relation to which there exists a greater diversity of opinion as regards its importance,

its pathology, and its management. While one set of practitioners view it as an accident of the most serious kind, and as giving rise to all the distressing symptoms that are known to accompany it, another, equally competent, regard it as a matter of little concern or importance. We are told, on the one hand, that the reposition of the displaced organ is a primary and essential point in the treatment, without which a cure is impossible, and, on the other, that if we direct our efforts to the removal of the accompanying engorgement and inflammation, we will have met all the therapeutical requirements, and that these conditions being removed, the organ will restore itself, or at least give no trouble. Now these are diametrically opposing views, and, as in most cases where extreme opinions are held upon any subject, the truth will be found to lie somewhere between.

We all understand how these things occur, and how it is that doctors so proverbially disagree. Whether consciously or unconsciously, every observer of natural phenomena forms a theory; consciously or unconsciously his subsequent facts are too often made to bend to that theory; those that are not sufficiently pliable for this purpose, are very likely to be rejected. He finally takes a position and forms an opinion, perhaps announces it; pride urges him to sustain it, and the result is that, unknowingly perhaps, he is dishonest—dishonest with himself and in his relation to science. No one objects to the truth merely as truth, but it must come in and take its place quietly, and without making disturbance, if it would be welcomed. But if it come as a waster, changing, displacing, and moving us from positions in which we have found ourselves comfortable, we are apt to regard it as an intruder, and either do not admit it at all, or do so with reluctance. In medicine, all experience shows that it is very difficult to avoid empiricism, and not become dogmatic.

In making these remarks I do not wish to be understood as condemning the mental processes which so often lead to these confusing results. Indeed, I regard intelligent thought itself upon any branch of human knowledge, as impossible, without the formation of hypothesis or theory. We naturally desire to understand that which we observe. The facts we learn by mere perception are only the stimuli to thought. These facts are compared with those that we already know, and from this comparison results an

inference or conclusion, and this conclusion is a theory.* The error, therefore, does not consist in forming the theory, but in the assumption that the observations upon which it is based are complete and embrace all the facts, and that its correctness is not to be tested by subsequent experience.

Before entering upon the subject of retroversion of the womb, let us recall for a moment the natural position of the organ, and its relation to the surrounding parts. Weighing from one to two ounces, it occupies nearly a central position in the pelvis, in contact only with soft yielding tissues, in the midst of which it is loosely suspended. Its fundus is about midway between the symphysis pubis and the promontory of the sacrum, and a little below a line drawn between those points. Here it is sustained by all the pelvic contents, and in speaking of the uterine supports, I think we ought to regard the pelvis as a whole, for although different organs and tissues each have their own part of the work to perform, they each contribute to a general result. Thus, not only is the uterus held in position by the round and broad ligaments, the anterior vaginal column, the structures of the perineum, etc., but also by its relations to and connections with the bladder, the rectum, and all the fasciæ, ligaments, and other parts and contents of the pelvic cavity. But all these do not by any means *fix* the womb in its position. The fundus, particularly, has considerable freedom of motion, especially forwards and backwards. The long axis of the organ and the direction of its cavity are identical with that of the brim of the pelvis, and are represented by a line drawn from the umbilicus to the os coccyx.

Unquestionably the strongest guard against retroversion is found in the round ligaments. And yet from the oblique direction of their attachment, they readily permit the womb to assume a vertical position—that is, one in which the axis of the organ corresponds with that of the whole body. But it cannot go beyond that position without subjecting these ligaments to a certain amount of traction. Hence, I think we may regard any case in which the fundus is carried backwards beyond such vertical line, as one of retroversion. But the round ligaments are not the only organs that prevent retroversion. Indeed, nature has been lavish in fur-

* Laycock on Medical Observation, page 28.

nishing means against the occurrence of this accident. There are, besides the cervico-sacral ligaments below and behind, the soft elastic intestinal cushion in Douglas' cul-de-sac, and the peculiar attachment of the broad ligaments, all fortifying the uterus in this direction.

It was at one time thought that the unimpregnated womb was not liable to retroversion, and all the earlier notices of the displacement had reference to the pregnant organ. Now, however, since gynaecology has come to be regarded as a legitimate field of practice—a field in which honest reputable men may labor without risk of excommunication—it is well known not only that it may occur independently of pregnancy, but that it does so very frequently. Indeed, my own experience leads me to believe that it is one of the commonest derangements of the female generative organs. In view of this frequency of occurrence, the great distress which usually accompanies it, its effect in preventing conception and in producing abortion, we must admit its importance and its claims upon our attention.

Much of the variance of opinion that we find among authors in regard to the relative frequency and gravity of this affection, may be reconciled, I believe, by a more accurate knowledge of its pathology and its complications, and it is of the highest importance to us as practitioners, that our ideas should be entirely clear, or at least as clear as the nature of the subject will admit. All correct treatment must be founded on correct views of causation and pathology, and if these latter be erroneous, so likewise will be the former.

Retroversion of the womb is defined to be that deviation of the organ in which the fundus is carried backwards and downwards from its normal position, and the cervix forwards and upwards. When the displacement is sufficiently marked, the organ will be found occupying a position between the vagina and rectum, and its neck or mouth will be elevated in an opposite direction, and will be found in the anterior and superior part of the pelvis, and behind or even above the symphysis pubis. This change in the situation of the uterus may be induced suddenly, or a considerable time may elapse before it becomes established. I have seen two cases in which it was almost instantly produced: in one, by a severe blow across the back while stooping; in the second, by attempting to lift a heavy weight. In both instances the symptoms

were violent and alarming. There was stoppage of the urine and feces; pains resembling those of labor, but more continuous, and a disposition to syncope; and in both cases these symptoms rapidly subsided on the replacement of the organ.

When the displacement takes place more slowly, the symptoms are much milder, and only acquire intensity when the deviation has reached an extreme degree. During the progress of the change, and sometimes even after the change has taken place, the sufferings of the patient are not extreme. We find her complaining, perhaps, of a difficulty in urinating, with an increased desire to do so; a painful dragging about the hips, loins and thighs, and occasionally a forcing, bearing-down pain. In most cases there is also present more or less leucorrhœal discharge.

The first point to which I desire specially to ask your attention relates to the cause or causes of the symptoms which have been enumerated as accompanying retroversion. Are they produced by the displacement? Or, are they caused rather by other accompanying pathological conditions? Those who believe that the displacement itself is the cause of the pains and leucorrhœal discharges observed in these cases, explain these results in two ways: 1, from the dragging upon the ligaments of the uterus—that is to say, upon the parts which sustain the organ in position; and 2, from the pressure exerted by the displaced viscous upon the various organs contained in the pelvis. To my mind this explanation seems most inadequate and unsatisfactory. When we consider the natural laxity of these uterine supports, and the great freedom of motion they permit to the fundus; and when we further consider the limited sphere within which the motions of the organ are confined even in extreme cases of retroversion, there seems to be little reason for believing in the alleged painful traction upon the ligaments by the displaced womb. Again, these displacements are frequently caused by the development of tumors in the uterine walls, and in these cases, although the retroversion may exist in a marked degree, the patients do not commonly seek for advice unless impelled to do so by reason of hemorrhage or the inconvenient increase in the size of the abdomen.

As regards the pressure exerted by the displaced womb upon the neighboring organs, it is readily seen that this cannot be the cause of the symptoms attributed to it, for two reasons: first, be-

cause the volume of the uterus, simply displaced is not increased, and is not sufficient to cause actual compression of the pelvic organs; and secondly, because this pressure is quite easily borne in a great number of cases where tumors much larger than the displaced uterus occupy the greater part of the pelvic cavity, and inevitably compress the contained viscera.

I have now under my charge a lady who has a fibrous tumor of the womb, sufficiently large to fill the entire pelvic cavity, and to reach almost to the umbilicus. It is only with the greatest difficulty that I can introduce a finger on either aspect of the tumor between it and the pelvic walls, and the flattened, ribbon-like form of the voided feces plainly indicates the pressure to which the rectum is subjected, and yet this patient only seeks medical assistance in consequence of occasional hemorrhage. For these reasons and some others which will appear presently, I am inclined to regard retroversion of the unimpregnated womb, simple and unconnected with any lesion of tissue, as ordinarily a harmless affection, provided it occur with sufficient slowness to accustom the involved parts to the change. In cases where it occurs suddenly, as in those cited, the parts are surprised, so to speak, and they resent the disturbance.

The great difference observed in the character and severity of the symptoms in acute and chronic cases of retroversion, would be very surprising if it were not that clinical experience furnishes us with an abundance of instances proving the tolerance to injurious impressions which may be induced in the human body, provided it be very gradually subjected to their influence. We have a familiar example of this in the enormous quantities of opium which may be safely taken by one long addicted to the habit; also, in the facility with which a person having chronic ophthalmia may expose his eyes to a degree of light which would be unendurable to one whose eye had been inflamed only a few hours. In expressing this opinion of the harmlessness of retroversion, I am quite aware that it differs from the one commonly held, and the reasons which seem so conclusive to my mind may not seem at all so to others. Nevertheless I bespeak for them your consideration.

In addition to the inadequacy of simple retroversion to produce important symptoms, already alluded to, we have the fact that replacement of the organ does not usually give relief, and in many

cases all mechanical attempts at reposition and retention, actually increase the patient's distress.

In the earlier years of my practice, acting under the belief that in a case of retroversion of the womb my clear duty was to rectify the displacement, I proceeded at once to restore the organ to its normal position, and then used such mechanical retentive means as seemed applicable. Hodges' lever pessaries and Meigs' ring were my favorites for this purpose. All this was done without reference to any existing complications, or to the duration of the malposition. My degree of success was not gratifying. Occasionally a patient would report herself as more comfortable, but in a very much larger number the local distress was so increased that I found myself obliged to remove the favorite and substitute some other form of support, which in its turn was removed to be followed by a third, and so on. It was a long time before I succeeded in unlearning what I had been taught upon this subject, but when I did so I ceased using (at least under the same circumstances) either the favorites or their substitutes, with great advantage to my patients.

Again, in a very large number of the cases of retroversion we are called upon to treat, there is present some structural disease of the womb, which is quite sufficient to produce all the symptoms present, independently of the displacement. And without undertaking at present to determine the relation which exists between the malposition and these organic changes, I will call your attention to the more frequent and important of these latter.

And, first, a very frequent accompaniment of retroversion is engorgement of the uterus. The organ is found to be enlarged, heavy, congested, and painful to the touch. In some instances this enlargement affects only a portion of the organ, as the body or the cervix, but usually the entire organ is involved, the walls being thickened, the cavity enlarged, and its orifice open. Sometimes the lips are swollen, often lobulated, projecting into the vagina, red and granular in appearance, and bounded by a distinct line marking the division between the mucous membrane of the vagina and that of the uterus—the condition, in short, which has been so frequently described as ulceration. In these cases we have precisely the symptoms that are present in cases of inflammatory engorgement, without displacement, viz.: pelvic and hypogastric

pains, leucorrhœa, and sympathetic disturbance of the functions of the neighboring organs. Although this condition of engorgement is a very frequent complication of retroversion, it is not by any means a constant one, and I have known at least two cases of well marked retroversion in which the uterus was decidedly undersized.

Associated sometimes with this hypertrophied condition of the womb, but existing also without it, is a chronic form of inflammation of the lining membrane of the cavity—either cervical or corporeal endometritis, or both—and then we have to add to the list of symptoms the various nervous disorders, menstrual irregularities, pains and leucorrhœa, which characterize these conditions.

Finally, a very frequent complication of retroversion is retroflexion of the womb. So commonly indeed are they found co-existent, that it is quite customary among systematic writers to classify and treat them together. But there is a wide difference between these conditions pathologically, and there should be clinically. Retroversion, as before stated, implies mere deviation of position, while retroflexion involves structural change, and hence its presence, like the other conditions mentioned, adds a new element of disorder, and a new cause of discomfort. The abnormal state now alluded to should not be confounded with incurvation of the organ, which I regard as a quite common and quite harmless condition. When it is present the entire organ is curved, and the bending of the canal corresponds exactly with that of the walls. But in true flexion of the womb there is a doubling or folding of it upon itself at some one point, usually at or near the junction of the cervix with the body. Bearing in mind that the uterus is an organ with thick walls and a narrow cavity, we can understand how it is that in a case of flexion the organ may present a merely curved outline, especially on the side *from* which the flexion proceeds, while the effect on the canal is to cause an actual compression and obstruction, and most of the cases of sterility and dysmenorrhœa which are associated with retroversion are those in which there is flexion also.

Having now considered these complications or accompaniments of retroversion, it seems proper to inquire into the relations which exist between them and the displacement, and to ascertain, if possi-

ble, which is first in order of occurrence. This inquiry is full of interest, and its solution must have an important bearing upon our therapeutics.

Among the means which the Creator has provided to guard against retroversion, the broad ligaments were enumerated. The manner in which these organs effect this object is peculiar. Their attachment to the womb is a very extensive one, reaching from the superior angle of the organ on each side as far down as the insertion of the vagina, and this broad connection gives rise to important results. When retroversion occurs, these ligaments must necessarily be twisted upon themselves, the degree of torsion depending upon the degree of displacement. When this latter is slight, the effect upon the ligaments will be slight also, but in those extreme cases in which the fundus of the womb must describe in its passage an arc of a circle equal to 160 degrees, and is found low down in the hollow of the sacrum, the broad ligaments must undergo a proportionate degree of torsion. This obstructs the venous channels, and this obstruction naturally gives rise to ovarian and uterine congestion, hypertrophy, hyperæsthesia, and menstrual disturbance.* But notwithstanding the presence of these conditions in retroversion might be explained on the assumption of the displacement being the primary disorder, I do not believe that ordinarily it is so. I regard this latter as secondary in point of time, as it is in pathological importance; for, were it otherwise, we are still driven back to the question, what causes the retroversion? If we consult authorities for a reply we are told, in a general way, that it is produced by anything that weakens the uterine supports, or increases the weight of the organ. Now, except in the case of pregnancy—which causes both these effects, and which we are excluding from consideration, as well as the cases in which the accident is produced suddenly—increase in the weight of the womb, and weakening of the uterine supports, imply disease of the organ and its appendages; and those conditions of disease which are found so generally existing with retroversion—so constantly indeed where there are distressing symptoms—are, I believe, not only the causes of those symptoms, but the proximate cause also of the displacement. And this conclusion is strengthened by the fact that

* Jones, Chicago Medical Journal, Jan., 1870.

in nearly every case of chronic retroversion, we shall find, on inquiry, an antecedent history of uterine disease.

What, then, should be the treatment? Clearly to reduce by appropriate means, local and general, the inflammation and engorgement which, while present, must make all attempts to permanently rectify the malposition futile. The remedies which I have found most efficient for this purpose are, local depletion by scarification, the vaginal douche, sedative and astringent injections, and pledgets of cotton wool saturated with glycerine, combined or not with some anodyne or astringent. At the same time we should bear in mind what too many practitioners engaged in any special practice seem much too prone to forget, namely, that all local appliances, whether mechanical, physical or chemical, are to be regarded as auxiliary and subordinate to the general therapeutical treatment required, whether the disease consists in lesion of structure, deviation of place, or disorder of function. There is a tendency, in gynaecology especially, to magnify unduly the importance of local disorders and local remedies, and to overlook, or at least to underrate, the general abnormal condition, and the constitutional means of restoration; and this tendency has invited and received deserved reproach upon this important branch of practice. The great advantage of devotion to any special department of practice, is the acquisition of an accuracy of diagnostic tact which is rarely attained by the general practitioner. But if while cultivating this we are unmindful of the inter-dependence and sympathy of each organ of the body with all the others, we shall inevitably become illiberal and contracted in our views and mere routinists in practice.

Shall we treat directly the malposition? Unquestionably we must if we would effect a cure. Although cases occasionally occur in which the removal of the engorgement and inflammation suffice to restore the organ to its normal position, I believe that they are generally cases in which the disease has existed a comparatively short time, and that in the large majority we shall find ourselves obliged to use direct means to rectify the displacement. We cannot but regard the retroversion as an evil, although not the greatest, perhaps, and we have seen how it may complicate and keep in existence other disorders; and further, why it is that in long-standing cases the displaced organ cannot restore itself.

And, hence, I am disposed to regard any plan of treatment which contemplates only the removal of the accompanying engorgement and inflammation in a case of extreme retroversion, without regard to the rectifying of the positional disorder, as unreliable and incomplete. To my mind such a course seems as unreasonable as it would be to treat a strangulated hernia by the use of leeches and cold applications without attempting any reposition of the bowel.

The mechanical devices by which the retroverted womb is restored and maintained in its place are familiar to you all, and I need not therefore consume your time by detailing them. But I would suggest that the best time for replacing the organ, after the tenderness and heaviness have been sufficiently reduced, is just prior to a menstrual period. If the operation be carefully performed, and great caution exercised during the time of the flow, it will occasionally be followed by permanent relief. The catamenial period determines a reparation and renewal of uterine tissue which supply a valuable aid in the treatment of most of the disorders of the organ.

To summarize, then, I have endeavored to make the following points, viz. :

1. Chronic retroversion of the womb, unaccompanied by structural disease, is of rare occurrence, and may be regarded as a harmless disorder.
2. The distressing symptoms usually attributed to retroversion are dependent upon complications involving structural change, as engorgement, inflammation, retroflexion, etc., rather than upon the displacement itself.
3. These complications are to be regarded as primary in point of time, as they are in pathological importance.
4. The treatment should have reference, first, to the removal of the structural lesion; and secondly, to the replacement of the organ and its retention by appropriate means.

ARTICLE II.—*Electro-Therapeutics.* A paper read by request of the “Chicago Society of Physicians and Surgeons,” at the regular meeting, July 22nd, 1872. By A. P. PECK, M.D., Chicago.

The principal forms of electrical force used therapeutically are the Galvanic or continuous and the induced or Faradic currents. All forms of static electricity are now little used; although they can be made valuable for medical purposes, they are more generally painful in their application and difficult to manipulate, while nearly all their effects can be produced by the force in a state of lower tension.

The requisites for a medical current are generally that there be a large quantity of electricity of low intensity. Of all kinds of batteries for generating electricity, the one most nearly fulfilling these requisites is the modification of the sulphate of copper battery, known as the specific gravity battery, one excellent form of which is patented by Dr. Hill, of this city, and is in general use on telegraph lines.

The battery is of large bulk, and only suitable for stationary use. The subject of portable batteries is important, but the time does not admit of its discussion here.

Inasmuch as much of the success of the therapeutical application of electricity depends on the kind used, I have deemed it worth while to devote this much space to indicating the best one for the purpose.

THE GALVANIC CURRENT.

This is sometimes called the primary current, the battery current, the continuous current, or the interrupted continuous current. The term I prefer, and the one most generally employed by scientific medical electricians, is the one which heads the list, viz., the galvanic current.

This you are aware is obtained from a large number of elements combined, so that the positive plate of one element is connected with the negative plate of the next, the whole thus forming a consecutive series called a “compound battery,” the current being taken from the two ends, one of which will be positive and the other negative.

The action of the current seems to be primarily and powerfully upon the nervous system. It is thus useful in the large class of neuroses, called neuralgias, where our pathological researches show us no discernible anatomical changes. Among these belong the hyperæsthesias—a class of maladies in my opinion not sufficiently estimated.

This current possesses the power of impressing the nerves of special sense, and is therefore very valuable in affections of those nerves requiring a stimulant action to rouse them to their normal activity, as in atrophies and degenerations.

Inasmuch as many of these affections are prone to affect the cranial nerves, I will here state that when this current is used about the head, where it is liable to pass through the brain or an important nerve trunk, like the vagus, at least three pieces of apparatus should be used: a rheotrope or pole-changer, for reversing the direction of the current; a rheometer, for measuring; and a rheostat, for graduating its strength. These should be used both for exercising a prudent care lest injury should result to the brain or viscus supplied by the nerve, and for the more accurate therapeutical application which can be effected by their use. To these may be added a rheotome or current-breaker, for interrupting the current slowly or rapidly as desired—a proceeding often useful both in treatment and diagnosis.

One of the most important effects of this current is its power of relaxing spasm. Next to chloroform and the ethers, it is perhaps the most powerful anti-spasmodic known, even tetanic spasms yielding to its influence, and the clonic cramps of the algid stage of cholera being relieved by its appropriate application.

So, too, that painful affection known as hemicrania, which oftentimes seems to be a true tetanus of the vaso-motor nerves, may be relieved by galvanization of the sympathetic.

We may take advantage of the chemical action of this current to produce electrolytic effects on the morphological and heterologous constituents of the body: collections of fluid in serous sacks being most amenable to this treatment, and ranging with varying degrees of efficiency through numerous conditions of degenerate cell action; even the electrolysis of cancerous tumors being advised by high authority when operative interference is deemed unadvisable.

Because of the intimate correlation of this force to the heat force we are able, by its retardation in a loop of the poorly conducting metal platinum, to produce a sufficient degree of heat for the actual cautery.

With regard to its medical use it is unfortunate that we have no means of correctly indicating the strength of the current used. The expression, "a current from so many cells of a certain kind of battery," is too vague, as all batteries vary in strength from time to time, and there is no accurate standard of comparison between any two. And I confess I do not know at present of any way to express, in a satisfactory manner, the strength of a galvanic current used, but hope that a standard rheometer will be sometime introduced, that there may be accuracy and uniformity in all applications.

THE INDUCED CURRENT.

The battery used for obtaining this current should consist of one large cell, and furnish a sufficient quantity of electricity.

From nearly all medical induction coils two currents are obtained, one called the primary or extra current, and the other the secondary. The first is taken by branch wires from the first or inducing coil of the helix, and is merely the battery current broken by the rheotome, and intensified by the inductive action of the coils on each other. The other is the induced current proper, and is taken from the outer coil which has no connection with the battery. And inasmuch as the duration of an induced current is only momentary, namely, upon the making and breaking of the inducing current, a rheotome or current-breaker is always introduced into the primary circuit, so that the current as felt is always a series of shocks. With the quantity current battery, however, and a properly constructed helix, these shocks are not painful. You will thus recognize the difference between the current as it should be and the one obtained from most of the small portable batteries, put up and sold for medical use, invariably as the best in the market, but which are so objectionable from their small quantity and fierce biting intensity of their currents, that they should be banished from medical use, except in a small minority of cases.

The instruments used for applying electricity are called rheophores, and many different forms of these are described in books

and put up by enterprising instrument makers. But, however imposing and scientific their appearance, or astonishing their cost, this vast array of complicated mechanism is unnecessary for ordinary use, and a few simple forms are enough.

As we said of the galvanic current, that it acted primarily and powerfully upon the nervous system, so we may say of the induced, that whether we use the primary or secondary current, its most noticeable effect is upon the muscular system. This is owing to the fact that every time a current of electricity is passed through a muscle it causes it to contract, and as the faradic is a constant succession of currents there is a succession of contractions, which, if sufficiently rapidly produced, may amount to spasm. The ordinary method of applying this current is by means of sponges to various parts of the body; and it is a very efficient way, but far exceeded in power by the electro-thermal bath—a method of use which you will not find described in books, nor has it been used anywhere as long and successfully as in Chicago.

It is a bath-tub of non-conducting material, with the rheophores arranged along the sides, so that the electricity can be sent in any direction through the water, including in its action the patient who is placed therein.

The advantages of this method are many, among which are these: The patient need not be touched by the hands of the operator, the direction of the currents being perfectly governed by means of a key-board. The avoidance of concentrating the current on any one part, as in the application with sponges, and the consequent avoidance of shock to any part, as the spine. The certainty of the application is not lessened, while if a local treatment of any part is desired at the same time, it can be made through a sponge to the part radiating the electricity from that point on all sides.

Bearing in mind the effect of this form of the force on muscle cell, whether of the striped or unstriped variety, it will be readily seen how there is not so efficient a treatment as this for obstinate constipation in all the range of therapeutics. The contractions of muscle produced by electricity are perfectly physiological, and the renewal of tissue thus obtained is permanent and normal; and all the drugs of the pharmacopœia, pummelings of the movement cure, change of climate, or of diet, could not do it as well. If

the curing of constipation were the only thing we could do with it, would it not be deserving of high praise? But all degenerated muscles are acted on in the same way, and if enough of the contractile fibre cells are left, the nutrition may be so improved that it shall be restored to its normal condition.

This property of acting on contractile fibres enables us to control the formation of hemorrhoids, to collapse vascular tumors, promote uterine contractions, and restore the tonicity of a dilated bladder.

In glaucoma the application of this current often renders the operation of iridectomy unnecessary, by producing absorption of the effused fluid.

But besides these dynamic effects the application of induced electricity has other purposes. It also acts on the nervous system, but in a more general way than galvanism.

We often meet cases in which there is malassimilation of food, and although the patient eats enough he is literally starving in the midst of plenty. There the application of faradism through the medium of the bath has the happiest effect, and rouses to duty the dormant powers through whose dereliction the tide of life is turned aside. In the control of pain this current rivals galvanism; and, contradictory as it may seem, sometimes relaxes spasm better.

In short, I may as well admit here that all we know of the physiological action of the two currents, does not enable us to decide arbitrarily which will benefit every case. Very often both are needed. Is there not then need of the most careful study and intelligent observation, that a rational system of therapeutics may be established in relation to this agent, so powerful for good or harm? But the time fails me to enumerate the vast number of points in which electricity has a bearing on the animal economy.

I cannot speak of its wonderful control over rheumatism, nor the speed with which a sprained ligament will get well under its influence, nor its control over certain inflammations, nor the power it has in promoting the absorption of many tumors and indurations, though all of these are fruitful topics, and many instances in point of each could be adduced from cases in actual practice. My aim has been in this paper to group together a part of the many therapeutical uses of electricity. I have left much unsaid, and yet have made many points you cannot find in the books.

It is a notorious fact that in no department of medicine are the books up to the latest improvements, and especially is this true of the rapidly growing science of electro-therapeutics.

In conclusion, let me urge you to a habit of close observation, when you use this agent, and when reporting upon it, a clear understanding of terms and a correct nomenclature. For I would protest against the careless manner in which it is used, and judgment formed of it. Where in all the range of scientific research would men be allowed to base opinions upon such practice as to place two ridiculous tin handles in the hands of a patient, send a rasping current of electricity through him, and then proclaim, "It's no use, I've tried electricity and it don't amount to anything," etc., *ad nauseam*? It would be called brazen empiricism and quackery, as indeed it is.

123 Calumet Avenue.

ARTICLE III.—*Monstrosity.* By J. W. BROOKS, M.D., Chicago.

Mrs. ——, a multipara, came to her labor at full term, June, 1872, and gave birth to a well-formed male child, apparently healthy, *except* an unusual formation on the lumbar region, extending one inch nearly down the sacrum. On delivery of the placenta, and attached thereto by several slight membranous filaments, was another placenta of apparently seventy or eighty days growth, that exactly fitted the top of the above named formation, and which had evidently been separated therefrom during the labor. The odor of the exudation arising from the surface from whence this was separated, for the first twenty hours after birth, was that of healthy liquor amnii. After that it was like the ordinary lochial discharge. To this little placenta, a small ovoid sac was attached, containing what I believe to have been an embryo of the size of a full grown larva of the honey bee, degenerated into a fatty substance. The sac burst in my hand while examining it, letting out not far from one-half ounce of a nearly colorless fluid.

The infant nursed, urinated and defecated as well as other healthy infants of its age, for two or three days, and then gradually fell off, dying on the seventh day in a state of trismus. Twenty-four hours after death, the writer, assisted by his friend, J. D. Skeer, M.D., instituted a careful examination of said tumor or growth. It was two inches transversely, by three and a half longitudinally; it was of the same size at the base as at the top, or, perhaps, a little larger. The integument extending up the sides would cover the surface, leaving only a central seam a little ruffled, provided the tissue within the tumor, which was peculiar, had been removed from the dermis. The tumor (called so for brevity) was laid open from above downward, commencing near the spinous process of the first dorsal vertebra, and terminating at the middle of the sacrum. We found the spinous processes of the second, third and fourth lumbar vertebræ split in the middle *down to* the meninges of the spinal cord, and the divided portions bent to the right and left. There was no communication between the tumor and the cavity within the membranes of the spinal cord; and there was no dilation of these membranes, as in spina bifida, at this part, but they were a little thicker than above and below. The blood-vessels were quite large; six of them, three on each side, were evidently suppliers of blood to the tumor, near to the dermoid tissue, and their direction was at right angles from the body of the child. The spinal cord and nerves arising therefrom, took their usual course. On opening the spinal membranes, a little spinal fluid issued, not more than usually occurs in the normal state. The structure of the tumor was, in a certain sense, cellular. The cells, or, perhaps, they should more properly be called sinuses (they certainly were senique), were numerous and generally empty. They very much resembled the sinuses of the gravid uterus recently emptied of its contents. I believe it to have been a case of twin conception, the placenta of one embryo, or fœtus, attaching to the lumbar region of the other, and the embryo perishing at an early day, while a certain degree of vitality remained to the little placenta, even as we see the attachment of the placenta to the uterus, and a degree of vitality remaining to it for several weeks after a miscarriage.

**ARTICLE IV.—*A Case of Poisoned Wound.* By G. C. PAOLI,
M.D., Chicago.**

I was called the eighth of July, in the afternoon, to see a boy four years of age, who previous to my arrival had been playing in the yard. On examination I found in the middle of the right leg a small elevation on the skin, which is called a papula. Neither swelling nor heat were perceptible, but the skin around the papula was very sensitive to the touch. Every attempt to stand on the leg produced the most excruciating pains. After careful examination, I concluded that my patient had been stung by some kind of an insect, but none of his playmates of the same age could give me any information that might corroborate my conjectures. I prescribed for the night a weak solution of permanganate of potassa, as an external application. Two hours after I had arrived at my residence, I was recalled, and informed that the patient was suffering from an inguinal hernia. To satisfy the parents I called again later in the evening, and found there was no rupture as they feared, but that one of the inguinal glands was somewhat swollen, as an effect of the irritation produced by the poisoned wound. We often find that small wounds or ulcerations in the lower extremities occasionally produce the above effects. The next morning on visiting my patient I found the following symptoms: The whole limb was swollen, and the temperature of the skin increased; pulse 130. He had been vomiting; tongue slightly coated; bowels constipated; urine scanty; very restless and sleepless. The whole limb was very sensitive to the touch. I ordered an emollient poultice, and, internally, carbonate of ammonia. In the evening I gave him an injection to move his bowels, and codeia to produce sleep.

The third day, pulse the same; the tongue dry and coated; had dozed a few hours; bowels moved. The fourth day, erysipelas appeared on the whole limb, involving the subcutaneous tissue. After the application of iodine, the erysipelas was dispersed about the twelfth day, but on the fourteenth day, a similar swelling and erysipelas also appeared, involving the whole left limb. During his illness he was several days delirious, and rejected all kinds of food except cold milk.

Remarks on the case.—About the eighth day after he was taken

sick, I was informed that a gentleman living in the house saw a spider of brownish color with a yellow tint crawling on my patient's leg, and instantly killed it. According to the description, I supposed it was a species of spider called tarantula, which is by no means rare about Chicago, as I learn from a German physician named D. Helmuth, who has devoted much time to the study of insects. There have been the most exaggerated descriptions of the nervous symptoms caused by the bite of the Italian tarantula. We find the symptoms of chorea precisely similar, but in this case the nervous symptoms were entirely absent. I must add that the poison was a long time lingering in the system, and it took my little patient six weeks before he could walk and regain his strength.

ARTICLE V.—*Iritis—Atropia—Paracentesis—Topical Use of Calomel—Aneurism of the Orbit—Sympathetic Ophthalmitis.* Read at the meeting of the State Medical Society, held at Rockford, May, 1872, by E. L. HOLMES, M.D., of Chicago.

There are a few topics connected with the diagnosis and treatment of certain common diseases which are of great importance and are yet neglected by many practitioners.

IRITIS.

It seems to me our best works scarcely dwell with sufficient emphasis on the difficulties which may embarrass the student in the diagnosis of this disease.

A typical case of iritis, even in its early stages, offers little difficulty. The symptoms upon which a diagnosis is based, are irregularity, contraction, and immobility of the pupil—discoloration of the iris, with a loss of the brilliancy of its surface, turbid condition of the aqueous humor, pink zone around the cornea, photophobia in and about the eye, pain, and diminution of sight from turbidity of the aqueous humor, or exudation upon the crystalline lens.

Not unfrequently these symptoms are masked. From the very onset there may be not only considerable oedema of the conjunctiva of the globe, but also of the whole lid, with no marked change in the appearance of the iris or pupil. Such an attack could be easily mistaken for simple conjunctivitis. The terrible pain, so

often experienced in iritis, is sometimes absent. The pupil is not always, at the commencement, irregular. In some forms of the disease, the inflammation is confined almost entirely to the posterior layers of the iris, producing no exudation upon the pupillary edge, and scarcely any redness or irregularity.

Many of the symptoms of iritis are present in some forms of keratitis. We have redness, photophobia, contracted and immovable pupil, dimness of vision, and apparent turbidity of the aqueous humor, with apparent want of brilliancy of the surface of the iris from a cloudy condition of the cornea.

I allude to this subject, from the fact that vision of very many eyes is partially, or even totally, lost, because an improper diagnosis is made, and, in consequence, injurious treatment instituted. It is seldom that a mistake would be made, if the practitioner would take the trouble, in cases where doubt is possible, to instil a drop or two of solution of *atropiae sulph.* (gr. iv to the ounce) into the eye. If iritis is present there is scarcely a possibility that the pupil will not dilate irregularly, which is, perhaps, the most important symptom in diagnostinating iritis.

I do not wish to dwell on the treatment of iritis, but will simply add that the free local use of *atropiae sulph.* is of chief importance. The patient should be kept at rest, free from exposure to light. Pain may be relieved by subcutaneous injections of morphine. There is reason to believe that mild but continued doses of calomel serve, in a great degree, to shorten the course of the disease, although it is far inferior in value to atropine.

ATROPIÆ SULPH.

I wish to ask the attention of the Society to some of the unusual effects of this remedy.

It is well known that the continued use of the sulphate produced congestion of the conjunctiva, and even vascularity of the cornea in exceptional cases. It is not, perhaps, so well known by general practitioners, that it produces, in some patients, a very distressing eczematous irritation of the lids. It is, probably, not generally known that, dropped into an eye with glaucomatous tendencies, or one in which there is a choroidal tumor, it is liable to produce, suddenly, very great pain, with intraocular inflammation.

In the use of so violent a poison even locally, great care should

be observed, lest too much of the liquid pass through the nasal ducts. As often as the drop is instilled into the eye, the lids should be at once carefully wiped, so that the fluid which does not adhere to the mucous membrane may be removed. Generally, the quarter of an ordinary drop, applied to the internal angle of the eye, by means of a large probe, is sufficient. It should be borne in mind that some persons are very susceptible to the influence of atropine. A slight fever, with a flush of the cheeks, will occasionally be produced by this remedy, even in minute quantities.

In two cases in which I had extracted cataract, the atropine had been used, as far as was known, precisely as in other cases. On the third day, in each case, violent mania occurred. A writer on cataract reports two cases of mania after extraction. I heard, recently, of two other such cases in the practice of a skilled operator. It had occurred to me that, possibly, all these patients were either very susceptible to the effects of atrophy, or, in some way, received larger quantities into the system than was intended.

CALOMEL.

A fact, not generally mentioned in our works on diseases of the eye, and not very generally known in the profession, I believe, is worthy of notice in reference to the local use of calomel. This remedy is of very great benefit in certain diseases, especially of the cornea, and much used. It should be remembered that it can be placed on the conjunctiva and cornea, not without danger, when the patient is taking the iodide of potash internally. The salts in the tears, and the calomel, often form a caustic sufficiently strong to produce quite a deep and painful eschar.

HANCOCK'S OPERATION.

This operation was devised as a substitute for iridectomy in the treatment of glaucoma. The author described the good effects of the operation to division of the ciliary muscle. A late member of this Society had very often performed the operation in a variety of diseases, and presented a paper on the subject at one of its meetings. He ascribed the benefits of the operation, as did Hancock, to the division of the ciliary ring. In conversation with the author of the paper alluded to, I was induced to perform the operation in painful abscess and ulcers of the cornea, believing, however, that the incision was simply a modified paracentesis, and

that the "division of the ciliary muscle" did not take place; since the direction of the cut was parallel to, but not across, the principal fibres of this muscle.

The evacuation of the aqueous humor is of great value in several conditions of the eye. As usually performed, through a minute puncture in the cornea, the wound heals at once, allowing the aqueous humor to accumulate in a very short time. Hancock's incision is three or four lines long, through the sclerotic perpendicular to the circumference of the cornea, but extending fairly into the anterior chamber. In this way, the aqueous, and some of the vitreous humor, is discharged—the wound, however, remains open some hours, allowing the fluid to drain away as fast as it accumulates. I have many times derived very great benefit from this little operation.

In introducing the triangular cataract-knife—perhaps the most convenient instrument in making the incision—care should be taken that the point be carried backward and outward from the axis of the globe, to avoid injuring the edge of the crystalline lens.

SYMPATHETIC OPHTHALMITIS.

I trust the Society will pardon me for again alluding to this subject. Its importance is impressed upon my mind from the fact that I have recently seen several cases of total blindness, in which vain attempts, by practitioners, to relieve the painful symptoms in an injured and blind eye resulted in the total loss of the other eye.

Almost any injury or disease of the globe—especially the presence of a foreign body within it—which leaves the globe, for a period, inflamed, possibly atrophied, with marked tenderness on pressure over the ciliary region, is liable to develop intraocular inflammation in the other eye—an inflammation which can seldom be arrested when once aroused. Since the danger is so terrible, there should be no delay in removing the diseased eye at an early period, while the other eye is yet sound.

ANEURISM OF THE ORBIT.

M. F., æt. twenty-two, received, last January, in a drunken quarrel, a blow from an iron weight, near the external angle of the right eye. Both lids were severely lacerated and extensively torn from the underlying tissues. The globe was also ruptured. The patient at once came under the care of a prudent practitioner.

In consultation with the physician, at the patient's residence, some days after, I found the lids and conjunctiva enormously swollen, the wound of the lids having been carefully adjusted with sutures. Simple, cooling lotions were applied for a week. Pain had been very slight since the injury. I was again called to the patient at the end of a week, and found the swelling as extensive as before, with considerable tenderness. As the large wound in the cornea remained open, with the iris protruding, I advised the removal of the whole cornea and iris. At the patient's request, he was taken to the Eye and Ear Infirmary.

I must here state that it was only when the patient reached the Infirmary that I discovered an extensive pulsating movement in the orbit and a remarkable bruit, synchronous with the pulse, which the patient stated he had observed a couple of days after the injury, although he had said nothing regarding it. I removed the cornea and iris, applied gentle pressure, and gave the patient tinct. verat. viride and tinct. ergotæ, in large doses, since a traumatic aneurism of the orbit, under my care, some years since, recovered under the use of these remedies.

At the end of a month the swelling was greatly reduced, the pulsation and bruit very much less distinct, in fact, scarcely perceptive when the patient stood erect. For a few days the patient was confident a cure was effected. The symptoms, however, soon returned without apparent cause. In addition, an artery along the brow to the temples became much enlarged, pulsating with violence, although the bruit was much less distinct than before.

In consultation with Prof. Powell, it was decided to reduce the patient's diet to a minimum in quantity and quality. After a trial of two weeks, the patient taking daily but a small quantity of bread and water, the symptoms were, if possible, more marked than before. It was finally decided to inject a half drachm of sol. persulph ferri, which was done by Prof. Powell, by means of a subcutaneous injection syringe, without the administration of an anæsthetic. The point of the syringe was carried deep into the orbit, and, probably, fairly into the aneurismal sack, since all the symptoms subsided at once. For some days there were considerable swelling and pain, extending over the cheek, down to the jaw and neck. At the end of a fortnight all symptoms had disappeared, when the patient was discharged well.

Selections.

Cholera. By W. S. ELY, M.D., Rochester, N. Y. (Read before the Medical Association of Central New York.)

GENTLEMEN—As the last named member of your “Committee on Cholera,” I beg to state that I assumed that the gentlemen preceding me on the committee, would furnish you exhaustive reports. I have, therefore, endeavored only to give in brief the conclusions reached from reference to the most recent and trustworthy published views upon—First, The origin and nature of Cholera; Second, Its propagation; Third, Its salient pathology; Fourth, Its treatment; Fifth, Its prevention.

FIRST—ITS ORIGIN AND NATURE.

Cholera is known to have existed epidemically and endemically in India for hundreds of years. Though generally supposed to have first appeared in Europe and America in the present century, there are those who believe it prevailed in Europe two or three hundred years ago, while a few medical historians think that the disease was known to Hippocrates. All are familiar with its history in the past fifty years, which embraces its progress from the far East, westward, and the invasion of this country in 1831 and 1832—its subsequent disappearance—to reappear in 1849, 1850, 1851 and 1852—and again in 1866.

With regard to the nature of cholera, speculation is abundant and facts are few. Though nearly all investigators believe in a specific poison, which is (material) organized—all potent—its essence has not yet been grasped. The *germ* theory has intelligent propounders, and may be said to be in favor. Professor Hallier, of Jena, is its most strenuous advocate. Having found in cholera stools certain microzymes, he builds his castle thus: Rice grains steeped in cholera discharge germinate, but the plants are sickly, and become covered with one of the fungi known as “smuts.” Cholera originates on the banks of the Ganges, where the rice plant abounds. The contagion of cholera is developed in a peculiar fungus, parasitic on the new plant, and the same material which, brought into contact with germinating grain, produces a smut, when introduced into the intestines, generates cholera. This beautiful discovery seems not to have been corroborated by Hallier’s co-workers.

Aitken is afraid to commit himself, and simply says: Cholera is a disease of miasmatic origin—probably now indigenous in Great Britain. Neimeyer don’t like to experiment with the fertilization

of rice with cholera discharges, and so says he won't dwell on Hallier's views, as he is not competent to decide them; but he does not hesitate to add: "Cholera, with us, is never miasmatic or indigenous, but is always due to an exotic parasite, brought us by cholera patients, and finding, for a time, a suitable soil and favorable circumstances for increasing." Pettenkoffer, in his latest work, affirms that cholera has its origin in a specific infective substance, which certain regions in India have produced for centuries. As it does not develop to the same extent every year, nor in every region, dying out and reappearing, you must assume not only the existence of a specific germ, or infective substance, but of an actual determinative local and periodical substratum, without which the specific cholera germ cannot produce cholera in the human subject. Neither the germ alone nor the local and seasonal conditions can produce the disease. It is only the product of the action of one on the other. We may accept it as a scientific probability that the cholera germ, the local and seasonal substratum, and the real cholera poison, the resultant, are of organic origin.

SECOND—THE PROPAGATION OF CHOLERA

includes the question of its contagious or infectious properties—about which there has been much dispute, due to misuse of the terms *contagion* and *infection*. These words have no clearly defined signification, often being employed synonymously. It is admitted that cholera is not contagious—in the sense of being communicated immediately from the sick to the well. Fresh cholera discharges have been fed to animals, and swallowed by men, without injury; those caring for the sick are not especially affected; the dissection of the dead is not dangerous. In short, there is no immediate contagion. How then is the disease propagated? An easy question to put—a difficult one to answer. Earth, air, water, fomites, human intercourse, have separately and combined been implicated—and I am of the opinion that all may be concerned in its transmission. The learned Graves very early said that "cholera seemed regulated by no common physical circumstance except human traffic and human intercourse." Hours might be spent in elaborating this statement, by tracing epidemics along great routes of travel, their progress marked by the decimation of cities, pilgrims, armies. Our observation is as constant as it is significant, viz: that the disease has been most destructive when there has been the greatest disregard of hygienic laws. We are forced to believe, provisionally, that cholera is propagated by indirect contagion—through the medium of the discharges—conveyed either through drinking water (Snow's theory, exemplified in London in 1849, and again in Brooklyn in 1866), or through dry discharges blown about, or through exhalations from earth saturated with discharges. (Pet-

tenkoffer's view, with abundant observation to confirm it). Mr. Simon, of England, reviewing the epidemic of 1866, says: "It cannot be too distinctly understood that the person who contracts cholera in this country, is demonstrated, with almost absolute certainty, to have been exposed to excremental pollution. That which gave him cholera was, meditately or immediately, cholera-contagion discharged from another's bowels; that the causes of cholera in England are excrement-sodden earth, excrement-reeking air, excrement-tainted water," to which may be added excrement-soiled clothing, bedding and utensils of the sick. Neimeyer plants himself strongly on this doctrine. In a small epidemic at Griesswald, the investigation of every case showed that the patient had used a privy of some house containing cholera patients, or indirectly communicating with it. He affirms that a person having simple choleraic diarrhoea may infect a district through which he may be passing. Abundant proof of the value of this theory of propagation, is found in the efficiency of preventive measures indicated by it. C. McNamara, of Calcutta, in a large treatise of 527 pages, issued in 1869, based on extensive study of cholera in India, says that "every outbreak of the disease beyond the confines of British India, may be traced back to Hindostan through a continuous chain of human beings similarly affected, or through contaminated water or fomites." He entirely ignores all other causes—never finding the disease to spread more rapidly than can be explained by this view. The New York Metropolitan Health Board, in 1866, acted most successfully upon the conclusion which it deemed previous epidemics had established, viz: "that the discharge of cholera patients impregnating soil, water, privies, sewers, constitute the positive, and as far as now known, the only means of propagating Asiatic cholera."

THIRD—WHAT ITS SALIENT PATHOLOGY.

The poison which produces the profound disturbance in cholera has been supposed to act primarily upon the blood as a rapid disorganizer, or primarily upon the nervous system, derangement of which excites blood changes. A few hold that we have to deal with a local intestinal disease. (Snow's theory). Everything points to a specific poison of intense energy, which rapidly takes from the blood its water and salts, early affects the kidneys, causing suspension of urinary secretion, and as the algid state is developed, lowers the temperature. I purposely omit symptoms, and pause not to detail frequently observed appearances of intestines, liver and kidneys, but desire to point especially to the pulmonary circulation, with reference to a theory of collapse now largely accepted. Collapse is not chiefly due to the drain of liquid from the bowels, as supposed, because collapse and discharges are often in inverse ratio. Stimulants do no good, and recovery is at

times too rapid to be consistent with this view. What then, is the explanation? It is that the essential cause of cholera collapse is an impeded circulation through the lungs, due to the contraction of minute pulmonary arteries upon poisoned blood. Autopsies of those dying in collapse, show always the left heart empty, while the right heart and systemic veins are distended. There seems to be a "stop-cock" action of minute vessels upon the poisoned current, by which it is arrested before it can reach the capillaries. A scanty oxygen-bearing stream results, and consequent lowered temperature, with suppression of the secretions dependent on oxidation, bile and urine. It is this pathological observation of the pulmonary condition that gives the strongest coloring to Johnson's "eliminating treatment." The discharges from the stomach and bowels being the means by which the poison is thrown off, we must aid them; but, alas! the poor patient can neither withstand the poison nor the shock to his system which its expulsion imposes.

FOURTH—THE TREATMENT OF CHOLERA.

With diverse views as to the causation and pathology of the disease, we expect a corresponding difference in methods of treatment. As in well established cases about as many have died under one plan of management as another, not much encouragement can be offered for any particular line of practice. If you wish to give calomel in doses of twenty grains or one-fourth grain, if you make opium or ipecac your sheet anchor, or from a malarial stand point give quinine, if you rely on castor oil and cold water, after Johnson, or decide to inject saline solutions into the veins for the deceptive improvement it will furnish, or, finally, if you fold your hands and employ no medicine, I will furnish you respectable authority for any of these plans. This is not encouraging, and should stimulate our efforts to improve our therapeutical resources. The judicious treatment of symptomatic indications will save lives, and in the absence of more definite knowledge, should be our rule.

FIFTH—ITS PREVENTION.

Sad, indeed, gentlemen, would be the whole history of cholera did not great encouragement come to us under this head. Though study and research have confessedly added nothing to our ability to cope with the fully formed disease, they have resulted in incalculable benefit by pointing out the practicability of its prevention. The arrest of the premonitory diarrhoea is, in the large proportion of cases, possible, and in every cholera epidemic the public should be instructed in reference to it, by published statements or house-to-house visitation. Remember that Fary, the great English statistician, believes that "the evidence of cases of algid cholera without premonitory diarrhoea is imperfectly established." A cholera scourge is always preceded and accompanied by an increase of

intestinal disorders, and these are produced and aggravated by unsanitary conditions. It is now established beyond question that crowding of population, filthy streets, decomposing organic matter, and, above all, foul privies and defective or clogged sewers, when taken with high temperature and moist air, are productive of diarrhoeal disorders, and, in cholera years, favor the rapid spread of the epidemic. New York City has its "diarrhoeal fields," as they are called, where the above conditions prevail every year, occasioning great mortality. Witness the cholera epidemic of 1866. It invaded these districts nearly exclusively, and was only controlled by a thorough police and lavish use of disinfectants. It is not my aim to cite proof for these assertions; it is furnished in abundance in recent reports on cholera epidemics. Let one instance suffice. In the 1866 epidemic on Blackwell's Island, there were 123 deaths in nine days. On the fourth day, when the epidemic was at its height, Dr. F. H. Hamilton gave his pledge to the Board of Commissioners that he would drive the cholera from the workhouse in from three to five days, if certain instructions were carried out. On the fifth day the pledge was redeemed and not another case occurred. Turning all the inmates out of doors, and disinfecting every stool, every latrine, every vessel, accomplished this result. Of the epidemic in New York City, it was said that "events proved that vigilance was the price of safety. If any one doubts the necessity and usefulness of thorough cleansing and disinfection, the experience of September would remove such doubts." The problem of disinfection, then, is the one we should address ourselves to in anticipation of cholera, and in its actual presence. Thorough use of sulphate of iron, the chlorine and bromine compounds, carbolic acid, and coal tar agents, and fumigation of houses, conjoined with organized inspection, will rob the epidemic of its terror and its fatality. Quarantine should be enforced, but not regarded as an absolute safeguard.

In the foregoing brief abstract of views, no complete discussion of any branch of the subject has been attempted, and reference to diagnosis, symptomatology and sequelæ has been purposely omitted, because upon these heads text-books are in full accord.

An Address on English Recollections of a German Surgeon. Being a Speech delivered at St. Thomas's Hospital, May 23, 1872.
By DR. STROMEYER, of Hanover.

GENTLEMEN—I suppose I may leave it to the kind care of my youngest English friend, Mr. William McCormac, to account for the liberty I take in addressing you. Let me ask your indulgence

for spoiling the Queen's English, which is not my native language. This is the first time that I speak to an English audience. As a surgeon, I dare say, I am not quite a foreigner, having got a sprinkling of English surgery even by inheritance. My father, who was a member of the Royal Medico-Chirurgical Society in London, and well known in his time, by having introduced vaccination in Germany, was a regular pupil of St. Thomas's Hospital, from 1792 to 1793, under Mr. Cline, at a time when Sir Astley Cooper was a demonstrator of anatomy there. He had a very high opinion of English surgery, and used to say that the best surgeons in the universe were to be found in London; that during a twelve months' presence there he witnessed only a very few cases in which his opinion was different about the propriety of the operations which he daily saw performed. He was able to judge for himself, being already thirty years old when in London, and having been a pupil and assistant of Professor Richter, in Göttingen. I followed my father's example, and have been a pupil myself at St. Thomas' Hospital in 1827 and 1828. Mr. Henry Green introduced me there, and made me acquainted with the splendid circle of surgeons then living in London: Benjamin Travers and John Tyrrell, of St. Thomas's Hospital; Bransby Cooper, Aston Key, and Mr. Morgan, of Guy's Hospital; William Lawrence and Henry Erle, of St. Bartholomew's Hospital; Sir Benjamin Brodie and Mr. Rose, of St. George's Hospital; Sir Charles Bell, of Middlesex Hospital; Mr. Guthrie, of Westminster Hospital; Mr. Wardrop, of Westminster Eye Infirmary. Sir Astley Cooper had already retired to the country. I have only seen him on an occasional visit to St. Thomas' Hospital where he used to come from time to time when he was tired, as he said, of looking after the ewes. It was highly gratifying to see how his presence used to be hailed. The same scene took place when old John Abernethy appeared in St. Bartholomew's Hospital. The students flocked around him, and he generally gave them a speech, in parting, in the open court of the Hospital, ending by quoting Shakspeare. Being very partial myself to the great poet, I liked these quotations, which reminded me of Sydenham recommending to read "Don Quixote." For a surgeon, nothing is so injurious as dullness; he must always be in good spirits when his services are required. Sir Astley Cooper used to say that a surgeon ought not to read too much; but this, I suppose, meant dull authors, not Shakespeare or Cervantes, who are both of them very accurate observers of human nature, like Dickens, Sterne, and Fielding, whose "Tom Jones," I daresay, you may happen to know.

I could speak for hours if I were to say what influence the surgeons in London whom I have named had on my mental development. First of all, I admire the truly noble character of the

profession, the good feeling of its masters to each other, their candor, their humanity in the treatment of severe cases. I can only repeat what my father said fifty years ago—the operations which I saw were, all of them, necessary, well planned, and, in most cases, executed with great dexterity. Manual dexterity was considered as a quality which scarcely deserved to be mentioned; it was only spoken of where it shone by its absence in a bungling operator. Every operation was executed with the sole view to save the patient's life or to diminish his sufferings, not to show the dexterity of a *virtuoso*. Circular amputation was preferred to the more showy flap amputation. This I had not forgotten when I had some influence in recommending the circular amputation in times of war, where it is of greater importance still than in chronic cases of civil practice. In 1827 I examined the invalids in Greenwich Hospital, on whom amputation had been performed by the flap method, and found that the fleshy cushion had disappeared entirely. Besides this, I admired English surgery for the simplicity of its application. The great conformity of principles resulting from simplicity struck me as highly valuable, because it makes a deep impression on the mind of a younger member. This conformity gives English surgery a national character. It is not the same in other countries, where only your very particular friends admit that you are right in saying that two and two make four, or that a severe gunshot fracture requires amputation.

I was well satisfied with the great caution of English surgeons in adopting innovations. I saw no resections then, and there was no trace of lithotripsy yet. It is better to begin slowly, and then to go on steadily. This is otherwise in Germany and in France, where surgeons are fond of novelties. At present you may witness the effect of greater caution. Sir Henry Thompson has eclipsed the inventor of lithotripsy, Civiale himself, whose instruments, indeed, were not worth trying till Heurteloup had found the right ones for him. Sir William Fergusson, by his articular resections, has surpassed most Continental surgeons; Mr. Spencer Wells, in ovariotomy, all living surgeons.

From what I had observed in London, I came to the conclusion that the beneficial influence of surgery and the high standing of the profession depend chiefly—(1) on the good feeling of its members towards their patients and towards each other, not excluding those of a former time; (2) on simplicity; (3) on a total abnegation of selfishness in planning and executing surgical operations.

You may ask me, gentlemen, why I could not have learned that just as well in Germany. There is no place there which can boast of such a number of great surgeons at the same time. Our greatest capitals have but a few surgeons of eminence in comparison.

Whatever may be their merit, their example is not so striking as that of a whole body acting on the same principles. In Paris the number of surgeons is greater than in our German universities of Berlin or Vienna, but not to be compared to London, which I consider is a central point of surgery for the whole globe. This, gentlemen, you may consider as the sincere opinion of a man who has watched the progress of surgery during half a century. I wish it may remain so for centuries.

After having been in London, I happened to be in Paris at a time when Lisfranc was thundering against Dupuytren, whom he used to call "le barbare de la Seine," as a sample of the good feeling amongst the profession there. It is one of the great advantages of traveling, and of seeing eminent men of other countries, that, by observing them in their activity, one may acquire a better notion of their character. Their writings excite greater interest, because we are inclined to give them greater credit. I always admired the simplicity of style in English authors in general, and of surgical writers in particular. Sterne ridicules the pompous style by mentioning the expression of his French barber about the solidity of a new wig, "You may immerse it into the ocean." An Englishman, says Sterne, would have prefered a pail of water. To avoid the barber's style, I took precious good care never to say ocean when I meant a pail of water.

After sketching these general impressions, permit me, gentlemen, to give a few particulars of the manner in which some of my English teachers have influenced me. Having so lately seen one of the greatest battle-fields of modern history—that of Sedan, where I met Mr. William MacCormac, who, from over-exertion, did not look so well as to-day—and the siege of Paris afterwards, let me speak of Mr. Guthrie first. I cannot say that I liked him personally quite so well as many of the others; but I admired his energy in maintaining the great principles acquired in the Peninsular War—the necessity of early primary operations, of tying a wounded artery, if possible, on the wounded spot itself. I have done all in my power to keep his doctrines, those of the admirable Hennen, and of old Baron Larrey, in fresh memory since 1848, when the time seemed to approach that Germany must go to war for its own development. For a man of sense, there can be no doubt about the necessity of early primary operations; but in military practice there are difficulties in which it is the duty of every medical man to maintain the sacred cause of humanity. The sentiment was appreciated even by a conqueror like Napoleon I, who said of Larrey that he was the most virtuous man he had ever known. It was one of Mr. Guthrie's best qualities that he always gave very positive reasons for what he did; so that a person could easily find out whether his own views were in accordance with Mr. Guthrie's opinions. There was no fickleness

about him. I differed from him in one essential point—that of his preferring amputation for gunshot-fractured thigh to conservative treatment. Guthrie places too much stress upon the imperfections of conservative treatment, the result of which is often a very disabled limb, whose possession does not make the patient very comfortable. But these imperfections admit of improvement, while a high amputation gives no prospect of better chances; it will always remain a very dangerous operation. Our first object is to save a man's life, and the second to make him comfortable, but not in his grave.

My results of conservative treatment in gunshot-fractured thigh, during the first three campaigns of 1849, 1850, and 1866, did not go beyond 50 per cent. healed. I saw the reasons of our failures, tried to avoid them, and went on with conservative treatment. In the two campaigns of Schleswig-Holstein (1849 and 1850) the patients had to be carried considerable distances. After the battle of Langensalza, in 1866, I was unable to prevent many cases from being spoiled by an injudicious use of plaster bandages. It was in Floing, near Sedan, where we succeeded in saving 77 per cent., twenty-seven amongst thirty-five patients, who had not been carried any great distance, and were treated without putting much restraint on their shattered limbs.

From my own father I had learned the advantages of Percival Pott's position, which may be employed during the first period in most cases; in others or later the double inclined plane, or a straight wire basket, will suffice.

According to my opinion, the great principles to be followed in compound fractures in general, are—(1) dressing the wounds without lifting the limb; (2) avoiding constriction; and (3) not irritating the muscles in straining them by mechanical contrivances. A gunshot fractured thigh permits a weight to be suspended to it, keeping the limb a little at rest, like the hand of an assistant, but not an extension by weight or other contrivances, that gives the limb its proper length, except in very few cases, as mentioned by Mr. MacCormac in his "Notes and Recollections," which healed without difficulties and without any perceptible shortening. The most common case is, that for sometime after the accident the muscles retain a tendency to retract, which is increased by opposition, and ceases by-and-by in a favorable position of the broken limb. The idea of subduing muscular action by constant extension, even in compound fracture, is not new; but it had not been tried before by contrivances so dangerous as a plaster of Paris bandage. This is applied under chloroform, which relaxes the muscles; the limb is made straight, and as long as its fellow. When the action of chloroform has ceased, the muscles recover their activity, and are kept in extension in spite of their violent efforts to contract, which often break the plaster bandage. The tension, which is

kept up by mechanical means, makes the sensibility rise to a high pitch, and severe inflammation follows. If the plaster bandage be loosely applied, by putting wadding and a flannel roller between, it is often well borne, but the limb is as short afterwards as if no bandage had been employed. While I was writing this in Hanover, on May 1, a young captain came to me, from whose gait no one would have thought that he had had a gunshot fractured thigh in 1870. A plaster bandage had been applied on the third day; he could not bear it. The surgeon who took it off next day told him that the fragments had taken a bad position under the bandage. From this time he was treated without restraint, and cured in six weeks, his limb lying in a wire basket. The shortening was one inch of his left lower extremity. His brother met with the same accident at the same time, but was healed with a shortening of five inches. Large splinters came away by suppuration, some of them being three inches long. The captain came to consult me about his brother. He is in service again long ago.

The danger of early plaster bandages on other parts of the skeleton is less than in the thigh; but it exists and is very great in the humerus, where pressure is very liable to stop the venous current or to drive a splinter of bone into the brachial artery. I treat these fractures by letting the arm lean on a soft cushion, which is tied to the thorax, the forearm being suspended in a sling. In Schleswig-Holstein I had twenty-four successful cases amongst twenty-nine. One of the German surgeons who took part in the late war—Dr. Rapprecht, of Munich—prefers the plaster bandage; but amongst the three cases which he had to treat there was one which proved fatal on the seventeenth day by hemorrhage, a splinter of bone having opened the brachial artery.

I differ from Mr. Guthrie, besides, in his appreciation of trephining the skull, which I have tried to exclude entirely from military practice, as useless in some and unnecessary in other cases. I consider a state of coma, from depressed skull, as no more an indication for applying the trepan than a comatose state in typhus is an indication to rouse the patient from it by any other means than those which are in accordance with his general state—cold, for instance, but not stimulants. As soon as the fragments of skull become detached by suppuration, the comatose state ceases of itself.

The greater difficulty in settling this skull question consists in this—that some patients survive the use of the trepan, or of an early extraction of splinters, and that some recover their senses very soon after the operation. This seems to be a conclusive proof of the legitimacy of active interference. But there is no depending upon it: the patient may die just as well after having recovered his senses completely, and, as experience has shown,

more easily than if you let him continue comatose by not disturbing the splinters. This might have been expected, from very solid physiological reasons. By taking away the splinters at an early period, in cases where the dura mater is wounded, you open the arachnoid cavity; air and acrid matter can enter it. Brain substance, when bruised, thus becomes putrid, while it might have been eliminated by reabsorption without access of air. Subcutaneous operations practiced in modern times have done a great deal to put more stress on excluding air; but even before their time, Dease and Sir Benjamin Brodie came to a conclusion that access of air was to be avoided in cases of fractured skull, and that no interference ought to take place for depression unless it was warranted by cerebral symptoms. John Hunter had not yet arrived at this degree of caution when he said in his Lectures (Palmer's edition, vol. i., p. 493)—"All fractures of the skull may be called compound; for if not so naturally, they are made so by the removal of the scalp."

In the retrograde tendency of surgical interference with a broken skull it was an important step not to remove the scalp; but other steps were to be argued. An open scalp wound over a broken skull does not produce a great change in the danger of the case. Spreading inflammation of the membranes of the brain or deep-seated suppuration does not necessarily follow from it; but these are very likely to take place if you open the arachnoid cavity by removing the splinters which have kept it closed. When the splinters come away by a very limited suppuration at a later period, the arachnoid cavity is closed by adhesions of dura mater to the brain. It is often impossible to say, beforehand, whether the dura mater has been open or not. If it is open, the danger is rendered much greater by removing the splinters. The *Medical Times and Gazette* of 1860, contains a list of eighty-three cases in which the trepan had been used, fifty-one of whom died, and thirty-two recovered. Amongst those who did well, the dura mater had been wounded; but in three cases the others as well were such that, according to my experience, they might have recovered without using the trepan or early extraction of splinters. Gunshot fractures of the skull are always compound; their successful treatment without active interference deprives this of one of its strongholds—the presence of an open wound, which formerly seemed to permit further violence.

During the two Schleswig-Holstein campaigns of 1849 and 1850, I had to treat forty cases of gunshot-fractured skull, thirty-three of whom recovered, and seven died. We had one case of trephining with happy result, but it was of that description that it might have done well without interference. The others were subjected to an antiphlogistic treatment by ice, bleeding, purgative medicines, and low diet. The splinters were not removed before being quite loose.

I have been blamed by Mr. Pirogoff and others for totally excluding active local interference in gunshot skull fractures; many others have followed my example. You will admit, gentlemen, that there is no knowing of what use a thing may be before having tried it. My object was to know how far we might get without active interference. The result was not unsatisfactory. It was the same thing with the treating typhus patients without stimulants. By trying it on physiological principles, derived from morbid anatomy, I found it very successful.

What has pleased me most, from a medical point of view, during the late war, was to find two hospitals in Rheims and one in Versailles where the number of deaths from typhus was not above eight per cent. Weak broth and some ounces of very sour wine were all the stimulants employed till the fever was over. The wine which I tasted was so sour that it must have contained more acid than common vinegar does, as I know from comparative experiments with potash. So it probably did the same service as phosphoric acid, which I prefer, with a well-boiled water-gruel for diet during the febrile stage. The two hospitals in Rheims were close to each other; in one, the patients were cooled by immersion—in the other, by active ventilation in tents, while the results were quite the same in both. In other hospitals the mortality from typhus amounted to 25, even to 50 per cent. Nothing shows the great value of the medical art and science better than such striking differences in the results of treatment under the same circumstances in regard to constitution, causes, and symptoms.

During the greater part of my presence in London I used to see the surgical patients at St. Bartholomew's Hospital under the care of that clever and highly accomplished surgeon, Mr. W. Lawrence, whose kindness and very instructive conversation I shall never forget. I saw a great number of patients under him with phlegmonous inflammation, who were treated by incisions at an early stage before suppuration had set in. This bold practice was at that time little known in Germany, where it was spread afterwards, and is generally employed up to this day. Cases of this description do not permit hesitation, and show the use of the treatment very evidently. The effect of an antiphlogistic treatment is not so striking in many other cases. It is only by a longer experience that a surgeon is enabled to say whether a case of fractured skull, or a compound fracture of the limb, has been greatly benefited by a venesection, which has been made, not in a late period when suppuration is forming, but early, when reaction is taking place, when the face becomes flushed, and the pulse full and hard. Amongst the many wise things which Sir Astley Cooper has said, was the advice to visit a patient with a broken skull three times a day, in order to find the proper time for bleeding him. This does not produce a similar effect like an incision in phlegmonous inflam-

mation; it does not restore the patient's consciousness, but it keeps him alive. That this really takes place can only be judged from other cases in which bleeding at a proper time has been omitted. But bleeding is out of fashion now in Germany as well as elsewhere. The discovery that pneumonia can be cured without bleeding has been the first cause of this antipathy. I have treated pneumonia myself without bleeding, and had very good results. I lost but five patients out of 558 during ten years in the general military hospital of Hanover, from 1853 to 1864. Our patients were cupped at once, and took phosphoric acid. I never allowed this to be proof that venesection was equally unnecessary in surgical cases, which have no typical course like pneumonia. It was a mistake of former times that pneumonia might be subdued by repeated bleeding—it runs its course in spite of that. I have tried in vain to maintain its use in surgical practice; there is no swimming right across a mighty stream; one must wait for the proper time of low water to cross it. It must be some years ago that Mr. Syme said bleeding-lancets were to be found in Great Britain no more. This, I suspect, has been the acme of antipathy to bleeding. From that moment it was no more a distinction not to bleed. Bleeding ventures to show its head again in the *Medical Times and Gazette* now rather timidly—recording cases which would have been fatal without venesection. Lancets can be easily supplied again, and a few cabbage-leaves, as Dickens says, will be sufficient to give a little practice before opening a vein in man. Perhaps I am mistaken in my expectation that bleeding will soon have its turn again. Perhaps I shall be damned in a future time for having been the last of the Mohicans recommending venesection. At all events I would in that case meet very good company—all my old friends in London.

On July 6, 1827, I witnessed the first case of hemorrhage from thrombosed vein, in St. Thomas's Hospital, under Mr. Tyrrell's care. A shoemaker had been stabbed by his own wife, with an awl, in the right upper arm. The wound appeared trifling to him—he did not notice it for some days; then an immense swelling of the upper arm took place; the forearm became gangrenous. Mr. Tyrrell amputated close to the axilla. In examining the separated limb, it was found that the brachial vein had been freely opened by the instrument; that a large hole, filled with coagulated blood, had formed near the vessels. The brachial vein was thrombosed to a considerable extent above the puncture. It struck me that the internal bleeding must have taken place after the obstruction of the brachial vein, and that gangrene had been produced by stagnation. I remembered this case many years later, when I found, in military practice, that secondary hemorrhages in open wounds take place from similar causes. I described them under the name of phlebotomous hemorrhages. Others prefer to

call them pyæmic, putting little stress upon the venous obstruction. But pyæmia does not always exist in these cases, and the influence of venous obstruction is evident. You will see this if you should happen to bleed again, which must be done by stopping the venous current above the place where you open the vein. Every open wound would bleed under a similar contrivance. Let me observe here, what I have forgotten to mention elsewhere, that capillary thrombosis, of some extent, below an injured vessel must have the same effect as thrombosis of the main vein, because it increases the degree of pressure which the column of blood exerts in entering the limb. The quality of the blood in it must become altered by impediments of either kind, and healthy nutrition cannot be kept up.

These observations are of great interest in military surgery: they teach us to be very cautious in treating wounds which may have affected vessels of considerable size, whose bleeding has been arrested by bruising or by coagula. The injured vessels may heal without hemorrhage, if the reflux of venous blood remain free; but if there be any obstruction, either by capillary or venous thrombosis, secondary hemorrhage can occur. Before this takes place the wound often changes its aspect from altered nutrition. Mr. Guthrie's plan of tying a wounded artery on the spot often does very well in minor vessels, but it often fails in the femoral artery. The large vein accompanying it has often been torn or bruised by the same ball. After tying the artery on the spot, the vein often becomes totally impermeable, and then hemorrhage recurs, or the limb becomes gangrenous. It may be proper in some cases to gain time by putting a ligature above the wounded spot; before new hemorrhage occurs, the vein may have undergone a favorable change. In other cases, it is better to amputate at once.

I cannot dismiss Mr. Tyrrell's name here without mentioning how I used to admire his cataract operations. He did them generally by a superior corneal incision of the greatest regularity. I adopted his method of sitting behind the patient's head in operating on the right eye. I had seen Graefe, the elder, in Berlin; Jaeger, the elder, in Vienna, and Roux in Paris, perform extraction as well with the left as with the right hand, but I preferred the more cautious English way. I often thought of Tyrrell's beautiful operations and their results when the time came that iridectomy seemed necessary for the great majority of cataracts before extracting them. I have hailed Dr. Liebreich's innovation as a candid acknowledgment that modern oculists had gone too far in this respect, and that the iris ought to be spared if possible or reasonable.

To Sir Benjamin Brodie I feel very thankful to this day for what I have seen of him in treating diseases of the urinary organs, but

chiefly for his skill in diseased joints. He was the first surgeon who enjoined the doctrine of keeping diseased joints at rest by putting them on a splint. The leather splints which he recommended had been partially superseded by starch or plaster bandages, but I use the leather splints constantly in my chronic cases, when the patient is to go out to bathe, or to use other local applications. Sir Benjamin Brodie's influence on the treatment of articular diseases has been great in Germany. His work on the subject was translated, in 1821, by Dr. Holscher, of Hanover. It had to fight its way in Germany against Rost's authority, who had introduced the red-hot iron as a general remedy for most chronic cases. It is used no more now. The great principle which Mr. Hilton has so ably advocated, of keeping diseased parts at rest, either by mechanical or by physiological means, has done away with the red-hot iron. It was Sir Benjamin Brodie's farther merit to point out cases where articular disease is spurious, and where rest proves hurtful. I consider Brodie's work on local nervous affections, published in 1837, as one of the greatest value on account of the number of persons who may be benefited by his doctrines. I had given a short extract of it in my "Manual of Surgery," but this had no effect in rousing the public attention. My German countrymen imagined that local nervous affections were a particular gift of nature to English young ladies. Not a month passes but I see a striking case in Hanover. My son-in-law, Professor Esmarch, who travels a great deal during his vacations, has been able to pick out a number of cases in different parts of Germany, and to extricate them from the spider's web of injudicious treatment. Perhaps I ought to have written myself about this subject more at large, but I despaired of doing it better than Sir Benjamin Brodie. Professor Esmarch published a small volume last year on "Articular Neurosis," which, I hope, will go far in spreading Sir Benjamin Brodie's doctrines, whose German translation has failed to produce the desired effect. This subject is intimately connected with the exertions of that great genius, whose discovery of the different roots of motor and sensitive nerves has spread a lustre on our century.

Perhaps no man has given so much to think of to his contemporaries as Sir Charles Bell. He did not live long enough to witness the wide expanse of studies derived from so simple a source as that of the different roots. Bell's researches on paralysis of the facial nerve alone were sufficient to create a number of similar ones. The connection of this illness with rheumatism; the liability which persons have for it who are subject to abdominal affections; to impediments in the circulation of the abdominal viscera, pointed to other diseases with diminished nervous energy—in the organs of sight and of hearing, for instance.

In following the hints given by Sir Charles Bell, I found that

every local affection originating from violence, or spontaneous inflammation, was influenced in its course by an enlarged liver or spleen, and that for a cure it is necessary to reduce their size. This accounts for the very general, but more empirical, use of blue pill and bark, and advises us to examine the size of the liver and spleen by percussion, especially in chronic cases which show very little tendency to heal—in secondary or tertiary syphilis, for instance.

Marshall Hall's discovery of the reflex function gave a new stimulus to thought on the great importance of Bell's discovery, from which it had taken its origin. This doctrine of the reflex action of the nervous system can only be compared to the discovery of the blood circulation. It gave an idea of the manner in which the nervous action is kept on day and night, and reflex action following the other. Trying to understand this action, I was led to assume a second principle, which is ultimately blended with reflex action. I found that immoderate reflex action in muscles, or muscular organs, was generally combined with painful feelings, sometimes in the neighborhood of, sometimes remote from, the seat of spasm. As a similar train of combined sensations must take place during healthy action of the muscles or muscular organs, I guessed that the action of the muscular system was necessary to maintain the nervous energy.

Sir Benjamin Brodie, in his work on local nervous affections, opposes the popular use of the name of spasm for painful feelings. This is the case in Germany. People make no difference between *Krampfe*, spasm, croup, and *Schmerz*, pain. There is some reason for it; where there is spasm there used to be pain, but often in remote parts. Instead of pain, spasm is often combined with altered sensibility, partial or general. The German name for hysteria is "mutterkrampfe," mother cramps. The uterus being a muscular organ, it may well be that hysteria partially consists of habitual spasm of the uterus, as a reflex action from the ovaries, or from other parts of the system. This idea was well known in former times. You can find it in Shakespeare's "King Lear," who is made to say, "How this mother swells up towards my heart."

One of the most striking examples of pain originating in spasm, is that of the glans penis, from contractions of the bladder around a stone in it. Another well-known example is pain in the knee, arising from reflex spasm of the flexor muscles of the hip-joint, from inflammation of its bones, sometimes from other causes.

In a particular case, where there was no inflamed hip-joint, I succeeded in doing away with the knee-pain by dividing the rectus and pectineus muscles. I have pointed out sensations, combined with muscular action, in all the organs of sense and in many cases

of disease. I have written on my theory of combined motor and sensitive nervous energy; first, in Hanover, 1837, in the *Gottenger Gelehrten Anzeigen*, an article which I reproduced in Latin, after having become Professor of Surgery in Erlangen. I have followed up this subject no farther, because it would have cost me the exertion of a whole life to carry it to a degree of perfection equivalent to a clear demonstration by physical evidence. But the fact that every pain, which evidently does not depend upon local alteration of texture, depends on spasmodic action of some muscular organ, has been of great use to me in practice, and I can advise you to put this question to yourself in every case of that description—where is the seat of spasm? Remember that it is as well in the voluntary as in the involuntary ones that spasms can take place. Perhaps you little suspect that the liver is an organ whose muscular energy is of great importance. But if you had felt the pain in passing a biliary calculus, you would think otherwise. I have felt it myself, and took six grains of opium in one night for it.

Pains in remote parts of the body are very frequent in liver complaints, in the shoulder, in the head, or in other parts. I could tell a great number of cases in which local nervous affection of an extremity proceeded from the liver, others from the accumulation of hard faeces in the large intestines, keeping up spastic action for their expulsion. It is very easy to cure them, after having found the real cause, without any topical application whatever to the affected limb.

After having spoken of such a variety of things and for such a length of time already, let me bid you farewell now, gentlemen, and thank you heartily for the kind attention with which you have been listening to me. I wish you may remember your studies in London with the same feelings of gratitude and satisfaction as I do after forty-four years of practical life.—*Medical Times and Gazette*.

Mud Baths.

There are some baths in Hungary and Bohemia where visitors plunge themselves into a basin of soft mud instead of crystal water. These mud baths, *moorbader*, are quite popular in their neighborhood. So at Saint Amand, in the north of France, there are some famous mud baths, salutary for diseased articulations, rheumatism, atrophy, etc. The patient is planted up to his neck in a hole in the soil filled with black, soft mud, warmed by the thermal waters which well up through it.

We have some also in this country. In a late paper we notice

that Grace Greenwood has become a convert to mud baths, and chants the praises of the Indian baths at the Geyser Springs, a California retreat, at the respectable altitude of 1690 feet above the sea. It is said that Edwin Forest, while suffering from a severe attack of rheumatism some years ago, went into the Indian mud bath one day, and came out all ready to play Othello or Metamora.

—*Med. Reporter.*

The baths at Hot Springs, Arkansas, are said to have been much more efficient, formerly, when taken in a similar manner.—ED.

Statistical Details of Four Years' Experience in Respect to the Form of Amaurosis Supposed to be Due to Tobacco. By JONATHAN HUTCHINSON, F.R.C.S. From the Royal London Ophthalmic Hospital Reports, vol. VII, part II, p. 169.

In the year 1864 I published, in the first volume of the "London Hospital Reports," under the title of "Clinical Data Respecting Cerebral Amaurosis," etc., a report on cases supposed to be connected with tobacco. I then gave all the cases of which I had notes which appeared to resemble the form due to smoking, including a considerable number in which it was quite certain that the habit referred to was not the cause. After this date, I carefully kept notes of every case bearing upon the subject which came under my notice, and in 1867 the Medico-Chirurgical Society did me the honor to publish in their Transactions, a statistical summary of my experience during the three intervening years. The cases included in that (second) report had been much more carefully selected, and from it several classes, which I had deemed it necessary to mention in my first, were wholly excluded. My recognition of the peculiarities of tobacco cases had also become somewhat more accurate. I now have to offer to the reader a third series of cases of the same kind, including most that came under my notice during the four years, 1867, 8, 9, and 10. I regret that I cannot say that during this period I have kept notes of quite all that have been under my care, more especially during the year 1868; but those which have been omitted, have been left out simply from want of time to take notes, not from any principle of selection. Each of my three several reports presents a fair picture of my experience in respect to all cases which could be considered similar to those due to smoking. Each includes a few in which I think it very doubtful whether or not smoking was the real cause. I have been most anxious to give to the reader a fair

opportunity of judging for himself as to the clinical features which this form of amaurosis presents in English practice, and of forming his own opinion as to whether the indictment against tobacco is a just one.

Any one who may take the trouble to compare the cases given in these three reports, will be struck by their similarity, and by the remarkable confirmation which the two later papers give to the conclusions of the first. A very great disproportion in the numbers of the two sexes who become the subjects of "idiopathic amaurosis," was one of the facts brought out (for the first time) by my first report. In it the numbers were 37 men and 3 women, and in the second they were 34 men and 5 women. In the present one they will be found to be 28 men and only one woman. There can, therefore, be no reasonable doubt that we have to deal with a formidable type of symmetrical amaurosis which is almost exclusively confined to the male sex. For myself, I may briefly avow that I have scrupulously investigated other possible causes, and that I feel no hesitation in believing that in most of these cases tobacco is the real one.

The facts as regards the one woman whose case is included in the present series, are extremely interesting. Her case in every feature resembled those which in males I attribute to smoking, and upon this point I had made special comment to those who were attending my class. After I had done so, she informed me that one of her sons had formerly been my patient, and that a nephew had been under the care of Mr. Hulke. I referred to my notes, and Mr. Hulke was kind enough also to refer to his, and we each found that the cases had been diagnosed as tobacco amaurosis. In each, the patient was a young man and a smoker. Now the lesson of these facts seems to me to support the opinion I have long held, that when tobacco causes blindness it does so in virtue of an idiosyncrasy. It is by no means improbable that such idiosyncrasy will be found occasionally in several members of the same family, and further, that it may involve liability to suffer from other influences besides tobacco smoking. Thus, then, we have two young men, cousins, attacked by amaurosis at an early age in virtue of an idiosyncrasy rendering them liable to special poisoning from tobacco; and we have a woman, who had never smoked, the mother of one and aunt of the other, at a much later period of life becoming the subject of a similar form of nerve disorder in virtue of the same peculiarity of diathesis acted upon by a different exciting cause. In her, not improbably the exciting cause was the disturbance consequent upon the cessation of menstruation.

Holding the opinion that there must be some pre-existing peculiarity in the nervous systems of those who become the subjects of tobacco amaurosis, I have been very anxious to discover, if

possible, whether it reveals itself by any other signs. The only points in this direction to which I feel at present inclined to attach any importance are the following. Not unfrequently it will be found that these patients have had unusual difficulty in learning to smoke, and have throughout life displayed special susceptibility to its influence, and that also they have often been, beyond the average, liable to suffer from sea sickness. In the tabular statement some information will in many cases be found given on these points. My attention to the matter of sea sickness was first given in consequence of the statements of some patients who were sailors, and who specially referred to it.

We have, during the last few years, made the observation that those who suffer are, almost invariably, smokers of *shag*, the most deleterious form of tobacco. As regards the results from disuse of tobacco my impression is strong, that almost invariably when the disuse is real and complete, the state of vision improves. I cannot exaggerate the expression of my conviction as to the duty of urging immediate and complete abstinence in the early stages of this most serious malady. Many of my patients came too late, having continued to smoke until the disease was far advanced. I have never seen a case in the early stage in which the disease went on to blindness if the patient had strength of will to give up the habit. In a large majority of those in whom, according to the patient's account, the habit was wholly abandoned, I had reason to suspect that it was only reduced. My experience on this point fully confirms that of Dr. Mackenzie, that there are those "who would rather smoke than see." It is very few, however, who have the honesty to admit their inability to give up the habit, and hence a very annoying source of fallacy in our inferences as to the effect of treatment.

It will be seen that in a few cases in the table, the amaurosis set in rather suddenly and advanced rapidly. This fact I always take as a strong one against the diagnosis of tobacco amaurosis, and in favor of that of neuritis. These cases ought, therefore, very probably to have been excluded from the list. As, however, the diagnosis is uncertain, I have preferred to let them stand. It so happens that some of these are the very ones in which no improvement resulted from the disuse of tobacco.

I have to thank my friends, Mr. Waren Tay and Mr. Nettleship, for much help in recording the notes of the cases and in compiling this report:

Number. Date. Reference	Name. Occupation. State of Health.	Age. Duration of Amaurosis.	Use of Tobacco and Alcohol.	State of Eyes.	Other Symptoms.	Progress and Remarks.
1. 1867, January 3. C., p. 94.	John Brewef, brick-layer. Has had good health.	22. 18 months.	Has smoked from a quarter to 'half an ounce of tobacco daily for five years and a half.	Left eye worse than right. Right sees 20 J. Pupils large, and the right one sluggish. Each disc pale, especially at its outer part.	Has been troubled with nocturnal emissions. Denies syphilis. Gradual failure of sight.	1867, March 7. Discs still paler, veins large, arteries small. Vision as before. He now says that he had not smoked for two years before the sight failed.
2. 1867, March 11. C., p. 157.	Samuel Park, shoe-maker. Pale, and weak looking.	35. About 2½ to 3 years.	Has smoked for thirteen years; at one time he smoked an ounce of tobacco daily; has left off smoking several times, and resumed it again. Has usually been "worse for liquor" once every few months, but does not consider himself a great drinker.	Vision unequal in the two eyes; right, 1 J. and 20-40; left, 16 J. and 20-200. No material difference with glasses. Discs of a redder color than natural, but otherwise normal. Pupils act well.	History of weakness of sight (probably failure of accommodation) in boyhood. Smoking makes him nervous if he exceeds his usual amount. Sight has varied a good deal within the last two or three years, being, as he believes, worse when he leaves off smoking.	Has several times given up smoking for months together, because it made him nervous (made his hands shake, etc.), but has found that his sight always gets ^{more} worse when he is not smoking. He is convinced that smoking is good for his sight; he gave it up only because it made him nervous.

Number, Date, Reference.	Name, Occupation, State of Health.	Age, Duration of Amaurosis.	Use of Tobacco and Alcohol.	State of Eyes.	Other Symptoms.	Progress and Remarks.
3, 1868.	A woman.	43. 6 months.	Had never smoked. Strictly moderate in stimulants.	White atrophy both.	None of any ment.	The symptoms had come on gradually, just as in the to- bacco cases in men.
4, 1868, March 1. C., p. 259.	Moses Garcia, cab- driver. Looks strong and healthy, 9 months, though swallow.	53. 9 months.	Has smoked from half an ounce to an ounce daily. Has drunk moderately.	White atrophy both discs.	At the time when his sight began to fail, his general health was bad; he was nervous and weak, troubled with sleeplessness, dimin- ution of sexual ap- petite, and flatu- lence. Was obliged to give up his work, and was three months in the Jews' Hospital for dys- peptic symptoms. Has headache across the forehead. Has gonorrhœa and chancre many times. No wasting of testes.	

<p>5. 1869. July 8. C., p. 318.</p>	<p>John Thompson, bailiff, in comfortable circumstances. 60. 9 months. Florid and robust. Hair, sandy-grey.</p>	<p>Has smoked for twenty years; for several years only a little; for five or six years past half an ounce a day. Has drunk alcoholic liquors constantly, but in moderate quantity.</p>	<p>Can see only 20 J. Discs white.</p>	<p>Has been very nervous for several years, especially after smoking in the morning. Many years ago suffered from "lumbago and sciatica," which laid him up for more than a year on and off. Gradual failure of sight.</p>	<p>Sept. 2, 1869. Since he came here. His sight has got worse; cannot now count fingers. Discs both equally and universally white; veins and arteries somewhat diminished.</p>
<p>6. 1869. Sept. 23. C., p. 324.</p>	<p>Wm. Billingham. 35. 6 weeks.</p>	<p>Has smoked at least half an ounce daily. Has drunk moderately.</p>	<p>Vision 20-100 and 12 J. Discs pale at the outer halves; sheath at outer part very distinct, and a little disturbance of choroid. Inner margins indistinct, apparently from tendency to formation of crescents.</p>	<p>Has often noticed a nervousness from smoking. Gradual failure of sight.</p>	<p>Has often noticed a nervousness from smoking. Gradual failure of sight.</p>

Number. Date. Reference.	Name, Occupation. State of Health.	Age, Duration of Amaurosis.	Use of Tobacco and Alcohol.	State of Eyes.	Other Symptoms.	Progress and Remarks.
7. 1869, July 12. C., p. 327.	John Smith, dry- man. Dark com- plexion, and heal- thy.	45. 3 months.	Has smoked much as he could get," chiefly "shag." Has drunk mod- erately.	Vision 20-100 and 14. Disks decidedly whiter at outer than at inner halves; inner halves look slightly swollen.	Gradual failure.	1869, Sept. 2. Vision 20-50 and 14 J. Considers his sight much better. Has left off smoking en- tirely.
8. 1869, October 7. C., p. 337.	Thomas Willis, has been a soldier.	42. 2 months.	Has smoked half an ounce daily for twenty years. Has not been in the habit of drinking while he smoked, and for two years has not drunk at all.	Vision 20-200 and 16. Disks ill-mar- gined, choroid thin, outer half of each disc decidedly pale; veins full, and arte- ries not dimin- ished.	Gradual failure.	1869, Nov. 4. Vision 20-100 and 14 J.
9. 1869, October (about). C., p. 339.	James Morris, engi- neer (flight out- door work): a Scotchman. Health good.	40. 2 months.	Smokes an ounce daily of <i>pig-tail</i> tobacco. Drinks several glasses of brandy and some beer daily.	Commencing atrophy of discs.	Gradual failure. Is rather nervous; says he has noticed no ill effects from smok- ing except occasion- al "heart-burn."	

10. 1869, July 5. C., p. 312.	Henry Cartwright, steward on board ship.	35. 2 months.	Has smoked half an ounce daily for twenty years. Has drunk a good deal.	Gradual failure; "is always in a 'fog.'" Has had no special inconvenience from smoking.
11. 1870, Feb. 3. C., p. 366.	Samuel Barnard, stableman. Square, and rather sallow.	61. 12 months.	Has smoked "moderately" forty years; generally <i>shag</i> tobacco. Has been steady, and has drunk chiefly beer.	Gradual failure; the right eye cannot quite tell letters in the distance. Disces decidedly paler at outer than inner halves.
12. 1870, Jan. 10. C., p. 354.	R. J. Littleboy, sailor.	55. 2 months.	Has smoked half an ounce daily for thirty years, chiefly <i>shag and cavendish</i> tobacco. Has been a great drinker, half a pint of spirits and two or three pints of beer daily, or more.	Vision 20-70. Disces pale at the outer halves.
4 1870, Feb. 21. C., p. 370.	George Jones.	30. 18 months.	Has smoked nearly half an ounce daily for six years, of <i>shag</i> tobacco. Has drunk a good deal of gin and rum, but not generally when he smoked.	None mentioned.
13. 1870, Feb. 21. C., p. 370.				Has never been sea-sick. Not difficulty in learning to smoke. 1870, Mar. 3. Vision 20-50, and 6 J. (with + 20). Dec. 15. His wife reports that he can see to read the newspaper.

Number. Date. Reference.	Name. Occupation. State of Health.	Age. Duration of Amaurosis.	Use of Tobacco and Alcohol.	State of Eyes.	Other Symptoms.	Progress and Remarks.
14. 1870, March 24. F., p. 4.	Thomas Allen.	53. 6 months.	Has used half an ounce daily, partly smoking, partly chewing, for more than thirty years, <i>shag</i> tobacco. Drinks porter pretty freely at times; does not drink while smoking.	Vision 20-200, and 16 J.	Gradual failure; began as a fog.	it 1870, April 11. Vision 20-70, and 16 J.
15. 1870, April 11. F., p. 25.	Joseph Bryant, en- gineer. Strong, healthy man.	56. 4 months.	Has smoked for forty years; half an ounce daily for last five years, <i>shag</i> tobacco. Formerly drunk five or six pints of beer daily; for several years past has drunk only half a pint, and occasionally a little rum.	Vision right eye 20-200, and 20 J., increased to 10 J. with glasses. Left eye lost many years ago after an injury by a chip of iron. Disc in right, blue white.	Gradual failure; no sight was excellent in right eye before the recent attack.	1870, Oct. 31. Says the sight is worse; sees 5-200, and barely 10 J. with glasses. He wants to get compensation for an accident which has happened since he came before, and has, he says, made his sight worse.

16. 1870, May 5. F., p. 31.	Henry Lock, chair- maker. Pale, but in good health.	Not noted.	Has smoked half an ounce daily for six- teen years, <i>shag</i> tobacco. Has usu- ally taken two pints of beer daily; has never been intem- perate.	Vision 20-100, and 10 J. Dices seen slightly swollen and indistinct; the outer half of each is whiter than the inner half; this difference is less marked in the right.	Gradual failure. Is rather deaf, especi- ally on right side; has been so for several years.	1870, August 25. Vis- ion 2 J.; has im- proved notably. Has not quite left off smoking. Has taken nothing but iron, and used a lit- tle astringent lo- tion for the eyes.
17. 1870, May 16. F., p. 34.	John Thornton. Spare, healthy, and vigorous; face rather florid.	60. 7 weeks.	Has smoked (some- times chewed) half an ounce daily for twenty years, <i>shag</i> tobacco. Drinks stout often when smoking, but con- siders himself tem- perate.	Vision 20-100, and 14 J. Dices pale, especially at outer halves; arteries not diminished.	Says the sight failed to 16 J. Dices pale, especially at outer halves; arteries not diminished.	1870, June 23. Vision 16 J.; still nothing in the distance. Nov. 24. The same.
18. 1870, May 19. F., p. 39.	Frederick Graham, at present in a work- house.	48. 5 weeks.	Has smoked half an ounce daily for twenty years, of <i>shag</i> tobacco.	Vision 20 J.; nothing in the distance. Dices decidedly whiter at the outer than at the inner part.	He asserts that the dimness came on suddenly, as he was walking, "a lot of gnats seemed to come before the sight," he believes the sight has not got much worse since that time.	1870, June 23. Vision 16 J.; still nothing in the distance. Nov. 24. The same.

Number, Date, Reference.	Name, Occupation, State of Health.	Age. Duration of Amaurosis.	Use of Tobacco and Alcohol.	State of Eyes.	Other Symptoms.	Progress and Remarks.
19. 1870, May 26. F., p. 39.	William Doncaster.	54. 12 months.	Has smoked about half an ounce daily for thirty-five years, <i>shag</i> tobacco.	Vision 20-100, and 16 J.; not improved by glasses. The optic chamæs are not far ad- vanced. The outer half of each disc is paler than the inner half: this is more marked in the right.	Gradual failure. He was very sick when he learnt to smoke; he has been to sea, and says that he has not been sea- sick.	He 1870, Sept. 1. Vision 10 J. Nov. 7. Reads words of 4 J. with- out any glass. Still smokes a very little (half an ounce a month).
20. 1870, Oct. 3. F., p. 71.	Fredk. C. Henderson, married, a clerk. In good health.	30. 2 years.	Has smoked an ounce a week. Has never been intemperate.	Vision with the left eye (the worst), he cannot see one's hand. Pupils of normal size, but act sluggishly. Discs are grey- white, especially at their outer halves.	Gradual failure; sight has been as bad as now for ten months. If he smoked more than his usual quantity it made him ill.	He left off smoking a year before he ap- plied for advice. <i>Note</i> his inability to smoke more than a small quantity of tobacco.
21. 1870, July 7. F., p. 67.	William Heatley.	50. 15-18 months.	Has smoked half an ounce daily for thirty years, <i>caren- dish</i> tobacco.	Vision 20-200, and 20 J. Discs somewhat pale, especially at the outer parts; left rather more so than right. There are slight iritic adhe- sions.	Gradual failure; no pain.	Had excellent sight formerly.

22. 1870. Oct. 17. F., p. 86.	John Liddle, joiner. 35. 7 months.	Has smoked two fingers at 3 feet. Vision, cannot count fingers at 3 feet. Disks atrophied; the left is more advanced than the right.	He asserts that his sight failed rather quickly, in two or three weeks, but without pain. He never could smoke very easily, and was always faint and sick if he smoked more than usual.	For the last year has smoked more than he used to do; has had family troubles
23. 1870. Sept. 5. F., p. 89.	William Owen. 63. 6 weeks.	Has smoked for more than twenty years, <i>shag</i> tobacco; lately has used a quarter to half an ounce daily.	Vision 20-30, and 8 Gradual failure; complains of a fog.	Believes present failure of sight began suddenly after exposure to the sun on a very hot day. Sight has continued to get worse ever since. Had great difficulty in learning to smoke when a boy.
24. 1870. Nov. 14. F., p. 102.	Thos. Comery, brick-layer. In excellent health; dark hair and skin.	Has smoked more or less for twenty-three years, largely for a year and a half, now a quarter of an ounce daily, <i>shag</i> tobacco. Drinks freely, and often gets drunk; drinks beer.	Vision 20 J.; cannot see 200 at 10 feet. He gets rather giddy at times, but is not otherwise ill.	Believes present failure of sight began suddenly after exposure to the sun on a very hot day. Sight has continued to get worse ever since. Had great difficulty in learning to smoke when a boy.

Number. Date. Reference.	Name. Occupation. State of Health.	Age. Duration of Amaurosis.	Use of Tobacco and Alcohol.	State of Eyes.	Other Symptoms.	Progress and Remarks.
25. 1870, Nov. 24. F., p. 105.	Charles Hopkins, engine-driver. Married; four children, all healthy. He is in good health, pale, dark hair.	35. 6 months.	Has smoked half an ounce daily for eighteen years, <i>shag</i> tobacco. Drinks a very moderate amount of beer with his meals.	Vision 20-50, and 8 J. Pupils act fairly well, and are of normal size. Discs a decidedly pale at the outer halves; vessels not diminished.	Very gradual failure, has been nervous lately, but has not smoked more than usual. Had no special difficulty in learning to smoke. Has never been to sea.	Had very sharp sight formerly.
26. 1870, Nov. 28. F., p. 109.	Israel Meyers, packing case maker. Fairly healthy-looking; head bald. Has had "rheumatism" in hand and foot; was once laid up with it.	39. 2 years.	Has smoked for eighteen years; until a year ago he used half an ounce daily, since that time only half as much, <i>shag</i> tobacco-drunk co. Has beer and spirits moderately.	Vision, cannot count fingers; the left is a little worse than the right. Pupils of medium size, motionless. Discs very white, sclerotic sheath plainly seen; vessels not diminished.	Gradual failure; has had no pain or inflammation in the eyes. Of late, whenever he has smoked more than usual, it has made him nervous and shaky. Had considerable difficulty in learning to smoke.	

27. 1870, Nov. 28. F., p. 112.	William Packer.	40. 2½ years.	Has smoked for twenty-four years; never smoked largely, from half to three quarters of an ounce weekly, <i>shag</i> tobacco. Has drunk beer moderately.	His sight began to fail in August, 1868; he believes that it began to fail suddenly on a hot day, and that it afterwards became worse. Learnt to smoke with difficulty, and has always been easily made sick and nervous by over-smoking. In boyhood he went to sea on board a collier, and was not troubled with sickness.	Has been under Mr. Couper's care for a long time; he continued to get worse after he left off smoking, and has been as bad as he is now for a year and a half.
28. 1870, June. F., p. 117.	J. Lack, married, farm-laborer.	42. 18 months.	Has smoked for twenty-five years; sometimes as much as half an ounce daily, <i>shag</i> tobacco. Of late years has drunk a good deal of beer (two or three pints daily).	Vision about 16 J.; nothing in the distance. Myopic retinæ. Dises in condition of white atrophy, especially at outer halves. There are also crescents, with ill-defined margins, probably advancing. Not improved for distance by concave glasses.	It seems probable that the myopia and the atrophy of dises have to some extent advanced together. He has never used his eyes much at close work.
					1870, Dec. 1. Sight no worse, perhaps a little better; 16 J. Has not all smoked at all. Is better in health.

Number. Date. Reference.	Name. Occupation. State of Health.	Age. Duration of Amaurosis.	Use of Tobacco and Alcohol.	State of Eyes.	Other Symptoms.	Progress and Remarks.
720. 1890, Dec. 5. F., p. 125.	Wardall Meadway, single. Has been farming, etc., at Cape and in Aus- tralia. In splendid health; light hair. Was once ill, more or less, two years ago, with "liver complaint."	36.	Began to smoke twenty-five years ago; has smoked quite regularly for eighteen years half an ounce daily; smoked a sort of roll tobacco ("Boor tobacco") at the Cape. Drinks a fair quantity of beer, and some gin.	Vision 20-200, and 12 I; not improved by glasses. Dises decidedly paler at outer third; vessels of good size.	Gradual failure. Learned to smoke easily; it never dis- agrees with him, or makes him nerv- ous. Is a good sailor.	

SUMMARY.—The five worst cases are, 20, 22, 24, 26, 27. In each the patient had been a *smoker for a long time* (average 19½ years, excluding No. 20, in which this item is not given. In several of them (excepting 24 and 26) the *quantity of tobacco smoked had been comparatively small*. The quantity of tobacco used by the two patients whose sight was worst of all (Nos. 20 and 27) was less than that used by any other patient. The *duration of the amblyopia* in these severe cases was (with the exception of No. 24) considerable, the average (excluding No. 24) being 21½ months. There were *other signs of intolerance of tobacco* in the same five cases. Only one other case (No. 6) is noted as having suffered any other unpleasant symptoms, and these were apparently slight. In all the worst cases the patients had used alcoholic drinks, and two of them had been great drinkers.

In the *worst case of all* (No. 27) the patient had smoked very little compared with most of the others; he had had difficulty in learning to smoke, and smoking had often, in after-life, made him sick and nervous. He had smoked for 24 years. According to his statement, his sight continued to get worse after he left off smoking, but as he did not come under my care until his amaurosis was almost absolute, I cannot verify his assertions on this point.

Editors' Book Table.

[**NOTE.**—All works reviewed in the columns of the CHICAGO MEDICAL JOURNAL may be found in the extensive stock of W. B. KEEN, COOKE & CO., whose catalogue of Medical Books will be sent to any address upon request.]

BOOKS RECEIVED.

The Physiology of Man. Vol. IV. Nervous System. By AUSTIN FLINT, JR., M.D.

The publication of this volume of the author's great work on human physiology, constitutes a new era for the American student, which will be hailed with gladness by every one desirous of substituting accurate scientific data as the bases of his practical deductions, for the vague, loose, and altogether too uncertain physiological knowledge which has hitherto constituted the foundations for practice of too many of our professional brethren.

Dr. Flint, from the beginning of his professional career, has been

an earnest student and worker and an original thinker, and it is by such, and by such only, that physiology, especially, can be advanced. His previous contributions to physiological science have placed the medical profession under a deep and lasting obligation, and this, the last though by no means the least, only intensifies it.

Until within comparatively a few years the physiology of the nervous system has been a terra incognita to the whole profession, and even now the land is still not too well known to the majority, so that the author is quite right in considering this, his last, as the most important of all his labors.

We have already credited the author with originality as a thinker, he should also be recognized as an original reader. The bibliography of the nervous system has been most carefully studied in the original publications, from Sir Charles Bell's Monograph in 1811, which may be said to be the beginning of nervous physiology, down to Hammond, the author's accomplished coadjutor. With regard to the former our author implicates him in the guilt of plagiarism from Magendie. We had been under the impression that the controversy, concerning the claim of priority of discovery, between these, the fathers of English and French physiology respectively, had been hitherto considered a drawn battle. Our American authority decides in favor of the illustrious Frenchman. Did time permit, we should take much pleasure in extending this brief "notice" into an elaborate review of this valuable work, calling attention to each chapter, indeed to almost every successive page, replete with the evidences of patient study, of laborious investigation, and of accurate analysis; but we must unwillingly omit the grateful task and content ourselves with simply urging each one of our readers to "take a new departure in physiology" from a careful study of the book.

H.

The Principles and Practice of Surgery. By FRANK HASTINGS HAMILTON, A.M., M.D., LL.D., Professor of the Practice of Surgery, etc., in Bellevue Hospital Medical College; Visiting Surgeon to Bellevue Hospital, etc., etc. Illustrated with 467 engravings on wood. New York: William Wood & Co., 27 Great Jones Street. 1872. Pp. 943.

We predict for this book a high place as a standard authority for both practitioners and students.

On the Functional Diseases of the Renal, Urinary and Reproductive Organs, with a general review of Urinary Pathology. By D. CAMPBELL, M.D., L.R.C.S., Edinburg, etc. Philadelphia: Lindsay & Blakiston. 1872. Pp. 300.

A lively, readable, entertaining and instructive *resume* of the subject.

The Treatment of Syphilis with Subcutaneous Sublimate Injections. By GEORGE LEWIN, Professor at the Fr. Wilh. University and Surgeon in Chief of the Syphilitic Wards and Skin Diseases of the Charite Hospital, Berlin. Translated by Carl Proegler, M.D., late Surgeon in the Prussian Service and in the U. S. Army, and E. H. Gale, M.D., late Surgeon U. S. Army. Philadelphia: Lindsay & Blakiston. 1872. Pp. 249.

PAMPHLETS.

Medico-Legal Science. By THAD. M. STEVENS, M.D., Indianapolis. Reprint from the Transactions of the Indiana State Medical Association. 1872.

Transactions of the State Medical Society of Michigan for the year 1872. Pp. 118.

Editorial.

The announcement of the proposed publication of "The Chicago Medical Register and Directory," will doubtless be very gratifying to the majority of our readers, indeed to all who have the true interests of the profession at heart. The work is capable of becoming most useful, not only to the profession, but to the public at large, and should eventually be made the standard of reference regarding the status of any institution, and of every member of the Medical profession. For the satisfactory accomplishment of this task, however, peculiar qualifications are demanded, and we are glad to perceive that the Editors have apparently endeavored to secure these, either in themselves or in their committee of revision.

The work proposes to indicate "The Hospitals, Infirmaries,

Dispensaries, Charitable Institutions and Asylums of the entire State of Illinois, also the Medical and Scientific Societies and Associations, with full lists of membership. It will also contain announcements of the Schools of Medicine and Pharmacy, etc."

"There will be given a list of Physicians in good standing in Chicago and vicinity, and in the larger towns in the State, with residence, office, and office hours; also a list of Dentists who are regularly graduated as D.D.S. or M.D., or who are members of a Dental Society; also a list of Veterinary Surgeons who are regularly educated," etc., etc.

The scheme is comprehensive, although in one or two points it might be made even more so with advantage.

We think it would be well to add to the name of each physician that of the college from which he graduated, and also the date of such graduation. The JOURNAL has already called the attention of the profession to the fact, that the country was overrun by a horde of charlatans holding purchased diplomas, and also become one of the initiators of the movement which resulted in the suppression of one of the worst of these diploma-factories, by legislative enactment in Pennsylvania. Our own city and State have their full quota of these self-styled Doctors, against whom the Editors of a Medical Register should exercise especial discrimination. Europe too has disgorged a swarm of medical (as well as other) impostors, into our midst who are not quite so easy of detection. In view of which fact we think it would have been wise for the Editors to have added to their Committee of Revision the name of some one of our more prominent German physicians, whose advice would prove invaluable to them in the prosecution of their investigations; of these, there are several well qualified for the task, which we fear may be imperfectly performed in this department without such co-operation. It is to be hoped that the Editors will also add to their work a list of Apothecaries, graduates in Pharmacy, or who are members of Pharmaceutical associations, that physicians and the general public may be able to discriminate between those who are and those who are not entitled to patronage and encouragement.

Let no fear of making invidious distinctions, and no mistaken charity, deter the projectors of this work from excluding rigidly from its pages the names of any and all, no matter how prominent

or popular, who may not be in the fullest sense of the expression "regular and in good standing in the profession."

Let them remember that true charity must discriminate carefully, lest in palliating the delinquencies of individuals, it bring odium upon an entire profession, and great detriment to the public.

The work in question will take rank in one of two categories; either as a reliable standard of reference upon which the profession first, and, secondly, the public, will rely for accurate information, or as a compilation of excerpts from, and subsidiary to the City Directory, of no more value than a Report of the Board of Health.

Should it merit position in the first class, it will become a permanent institution, and if not perfect at first, will, like good wine, improve with age. If, however, it should fall into the second class, like the victims of cholera infantum, it will scarcely survive its first year.

Of the gentlemen who have undertaken this work, our notice is a sufficient indication of our high opinion; they have the capacity, and we believe the intention, to make this work what its most earnest advocates could desire it to be. But unfortunately they are "*good fellows*," and we fear too kind-hearted to be as strict as they ought to be. We trust they will harden their hearts, and remember "*the greatest good to the greatest number.*"

H.

National Medical Library.

The attention of our readers is especially directed to the subjoined notice of Dr. Billings, Librarian, Surgeon General's Office, to which it may perhaps be desirable to prefix a word in explanation. The Library attached to the Surgeon General's Office at Washington, and for which Dr. B. desires the journals indicated below, is by no means exclusively for the use and benefit of the medical officers of the army; but is intended to be a National Medical Library, open to the profession and the public at large, for study and for reference. The Librarian of Congress has relinquished the Medical Department of that library to the one in question, and it has already become the most valuable source of reference in the country.

Many books, pamphlets, catalogues, odd numbers of journals,

etc., which are mere literary rubbish to their possessors, could be utilized here, and become valuable to the profession.

Contributors to this National Medical Library, in reality, enrich their profession, and thus indirectly will reap the reward of their generosity.

H.

Wanted—For the Library of the Surgeon General's Office, at Washington, D. C.

To complete the files of American Medical periodicals, in the above Library, the following are wanted:

Illinois Medical and Surgical Journal, Chicago, 1844-45. Wanted, No. 10, vol. I.; Nos. 6, 8, 10, 11 and 12, of vol. II.

Illinois and Indiana Medical and Surgical Journal, Chicago, 1846-47. Wanted, Nos. 3, 4, 5 and 6, vol. I.

Northwestern Medical and Surgical Journal. Wanted, No. 1, vol. II, (1849); No. 9, vol. XI, whole series; Vol. XII, whole series.

Western Medico-Chirurgical Journal, Keokuk, Iowa, 1852-53. Wanted, all or any of it.

St. Louis Medical and Surgical Journal. Wanted, vols. I and II, 1843-44.

As it is desired to make this Library a complete record of American Medicine, old Medical pamphlets of all kinds, Lectures, Addresses, Reports, Announcements of Medical Colleges, etc., are desired.

For any of the above, a fair price will be paid, or valuable exchanges will be furnished.

Pamphlets and Journals for the Library may be forwarded by mail, post free, if addressed to the Surgeon General, U. S. A., Washington, D. C., and marked in one corner "For the Library."

J. S. BILLINGS,
Ass't Surg. U. S. A. and Librarian S. G. O.

Rush Medical College.

The introductory exercises of the opening of the Thirtieth Annual Course of Lectures of the Rush Medical College will be

held in the amphitheatre of the temporary college building, at the south-west corner of Eighteenth and Arnold streets, Chicago, at 7:30 p. m., Wednesday, October 2d, 1872. The Introductory will be delivered by J. Adams Allen, M.D., LL.D., Professor of Principles and Practice of Medicine. The unexpectedly large number of matriculants at the present writing, promises a large class for the coming session.

The Regular Lectures will commence on the morning of October 3d, and continue twenty weeks. As there will be but one Introductory, students are reminded that their interests will be served by their attendance at the opening exercises.

J. H. ETHERIDGE,

Assistant Secretary Rush Medical College Faculty,

603 Michigan Avenue.

CHICAGO, Sept. 18, 1872.

Loot.

Of Drains, Smells, and Fevers.

The free ventilation that has recently been given to the unsavory subject of sewers and drains, in connection with outbreaks of typhoid fever, will, it is to be hoped, lead to practical ventilation of the sewers themselves, so that the noxious gases pent therein, and panting for escape, will be accommodated in this respect in a way as little prejudicial as possible to the health of the community. Time was when main drainage was unknown; houses were drained into cess-pits, and from time to time a functionary known as a "nightman," visited the premises in the dead of night, and bucketed out all the collected filth into his cart, to be carried away and used as manure. It did not appear that these nightmen were specially liable to fever or other disease in consequence of their avocation; indeed, the belief among some was that the occupation was rather healthy than otherwise, perhaps in consequence of the stimulating ammoniacal odors so freely inhaled.

However, we have now changed all this; at least, in most large towns; and houses are put in connection with an almost endless vista of long drains, which, while rather carriers than reservoirs of sewerage matter, are always full of most poisonous gas.

How many outbreaks of typhoid fever, especially in windy watering-places, have been caused by the current of wind up these

sewers, forcing the gases into houses, it is needless to say. One well-known instance we can easily call to mind, where, at the suggestion of a well-known engineer, the introduction of ventilators protected by charcoal was a prompt means of thoroughly arresting further outbreak of typhoid in the place.

A consideration of these matters of experience will show that flushing the sewers of any house or district, at a moderate elevation above the trunk sewer, must be most dangerous, for the reason that, as the torrent of water rushes along, it displaces the gases that are collected in the sewer, and these, rising upwards, may be driven into a dwelling-house with all the force that is exercised by the pressure of the current of water.

It is, I presume, to guard against this very evil that Mr. Rawlinson has suggested the simple but most rational expedient of having the lid of every water-closet perforated with a hole just over the handle, so that this may be pulled up while the lid is closed, and so the stinking gases, displaced by the water-flow, cannot enter the house.

It would be out of place here to enter into the arrangements by which house-drains can be safely flushed. The principle to be kept in view is, that the gases rise up as the water goes down; and such arrangements in the way of ventilation must be made as will secure for these gases a free outlet into the open air. The old-fashioned cess-pool of stagnant filth may have its objections; but practice tends to prove that sewage in active motion may be more dangerous to the public health than the same matter stagnant and at rest.—*The Doctor.*

Management of Cerebro-Spinal Meningitis.

J. Maclay Armstrong, M.D., Edwardsville, Ill. (*Med. and Surg. Reporter*), writes that after the relief of the brain symptoms, spotted-fever should be treated as any ordinary case of sub-acute rheumatism. He uses the following mixtures:

R. Tinct. xanthoxylum, tinct. cimicifuga rac., tinct. guaiacum, aa oz. ij.; tinct. colchicum rad., oz. j.; potas. acetas, dr. j.; syr. simplex, spts. vin. gallici, aa oz. ij. M. Sig. A dessert-spoonful every four hours.

R. Quin. sulph., gr. xj.; tinct. ferri chlor., dr. ij.; syr. simplex, aquæ menthe pip., aa oz. j. M. Sig. A dessert-spoonful three times a day, with Dover's powders at night, if necessary.

He has had under his care thirty-two cases of this disease; three proved fatal within forty-eight hours; the remainder recovered. He is also convinced that this disease should be known as cerebro-spinal rheumatosis.—*Med. Record.*